18 JULY 1958

The Autocar

1/-

FOUNDED 1895 LARGEST CIRCULATION

TOUCH UP OR REPAINT

—IT'S QUICKER AND EASIER THAN EVER BEFORE!

You can now treat your car to the sparkling mirror-smooth brilliance of a Brushing Belco finish even more easily and quickly! The new Brushing Belco Primer Surfacer dries so fast that you can brush on your second coat of Brushing Belco Primer Surfacer *within an hour* of applying the first. And an hour or so later you can start smoothing down for your finishing coat of Belco brilliance!

THE ***BRILLIANT*** WAY TO STOP RUST

Damaged or worn paint means *rust*. If neglected, it will eat further and further into all the surrounding metal, and down goes the trade-in value of your car! Put matters right now, quickly and easily, with Brushing Belco. There's nothing like Belco for providing a hard, brilliant, glass-smooth protection that *lasts*. (Keep a 'baby-size' supply in your garage, ready for prompt action as need arises.)

THE FOLLOWING 54 POPULAR CAR COLOURS NOW AVAILABLE IN TOUCH UP TINS ONLY

AUSTIN
Balmoral Blue
Cardigan Grey
Court Grey
Cotswold Beige
Mist Green
Naples Blue
Portland Grey
Shaftesbury Grey
Silver Grey
Solent Blue
Spring green
Tintern Green
Tweed Grey
Windsor Grey

ROOTES
Cactus Green
Cotswold Grey
Dawn Mist
Dove Grey
Golden Sand
Mayfair Grey
Mid Green
Mountain Grey
Pearl Grey
Summer Blue

FORD
Bristol Fawn
Canterbury Green
Carlisle Blue
Channel Green
Consul Ivory
Corfe Grey
Hereford Green
Lichfield Green
Sarum Blue
Warwick Green
Wells Fawn
WestminsterBlue

STANDARD
Beige
Birch Grey
Comet Blue
Elfin Green
Lavender Grey
Salvador Blue

MORRIS
Birch Grey
British Racing Green
Cream
Dark Green
Empire Green
Mist Green
Sage Green
Sandy Beige

VAUXHALL
Dover White
Empress Blue
Kingfisher Blue
Vista Blue

ICI *Available in ½ pint and ¼ pint tins only*

BRUSHING **BELCO** PRIMER SURFACER AND CELLULOSE BRUSHING

A ***BRILLIANT*** REPAINT

If your car needs a repaint, you can make a really excellent job of it yourself with Brushing Belco. You're not convinced? Then let's see what the job entails. At bottom, only two things — surface preparation and paint application.

What about surface preparation? It's all-important, but *not* difficult. Removing dirt and grease with hot soapy water; or rust with emery paper; rubbing down and smoothing with Wet-or-Dry—these jobs require care and thoroughness, but with a little patience, you can do it.

When it comes to the finish, apply Brushing Belco *quickly and freely* with the least possible amount of brushing. *Don't* go back on your work trying to 'improve' it—Belco takes care of brush-marks. They just disappear, leaving a hard, brilliant mirror-smooth finish.

Look through the Belco Colour Card at your dealers — there's a big range of colours to choose from. Follow the Belco instruction leaflet, step by step, and you'll turn out a job to be proud of!

BELCO

Obtainable from HALFORDS branches or your usual dealer.

The Autocar

VOLUME 109 · NUMBER 3265 · 18 JULY 1958
ILIFFE & SONS LTD., DORSET HOUSE, STAMFORD STREET, LONDON, S.E.1
Established 1895 Telephone, Waterloo 3333 Telegrams, Autocars, Sedist, London

Contents

BRANCH OFFICES
Coventry · 8-10 Corporation Street
Telephone · Coventry 25210
Birmingham · King Edward House New Street
Telephone · Midland 7191 (7 lines)
Manchester, 3 · 260 Deansgate
Telephone · Blackfriars 4412 (3 lines)
Deansgate 3595 (2 lines)
Glasgow, C.2 · 26B Renfield Street
Telephone · Central 1265-6 (6 lines)

The annual subscription is home, £3 10s 0d; overseas £4 0s 0d Canada and U.S.A. $11·00
Second Class Mail privileges authorized at New York, N.Y.

Seat Comfort

SPECIALISTS, and the few owners who study all the details, are well aware of the requirements, possibilities and shortcomings in car seats—particularly front seats. The fact that special seats are offered at extra cost for a number of models may be a tacit admission that the standard fittings are not all that they might be—not, at least, for all sizes of individual.

Obviously there are degrees of luxury, obtainable according to the price one is willing to pay, but here we have the essentials in mind. There has been a tendency in the new, brighter cars of the last year or so to give more thought to appearance, in the form of fancy materials, beading and inlays, than to the primary job of supporting the occupant comfortably.

We feel the time has come when the front seats on almost all cars should be simply adjustable in three planes: fore and aft, up and down, and tilt. For those who can afford extras, powered operation might be offered as a refinement, as it is in America.

In Europe, and in Great Britain in particular, drivers and passengers are more conscious of the need for firm location, because of our winding roads. Drivers gain some stability from holding the steering wheel, but to have to depend on one's grip on the wheel is a bad practice, likely to impair the precision of control. Passengers all too often roll from side to side, grasping any handle or rail available.

Bucket seats have obvious advantages in the sports-type cars in which they are usually found. The extent of the curve-round of their backs should not be sufficient to impede elbow movement if the old-fashioned, short-arm driving attitude is adopted.

With bench front seats, the third occupant can be seated conveniently, but there are disadvantages when driving only two up. Here a folding central arm rest helps prevent sliding sideways. It is also, as a rule, a case of "when the driver adjusts we all adjust". Perhaps the ideal front seat arrangement is a compromise: the divided bench, with twin central arm rests and vestigial bucketing at the base of the squabs. Useful low-down location is then provided, the seats can be adjusted separately to suit two front occupants, and if three are to sit abreast, the seat adjustments can be matched and the dividing arms folded away.

Even such seating as this can be far from the ideal if simple facts of anatomy are overlooked. Too short a seat gives insufficient support to the thighs and makes for restlessness, wrong curvature of the squab presses the back uncomfortably and causes aches and stiffness, and the squab should be high enough to provide full support—but these considerations open up another subject.

Impossibilities at Once, Miracles a Little Longer

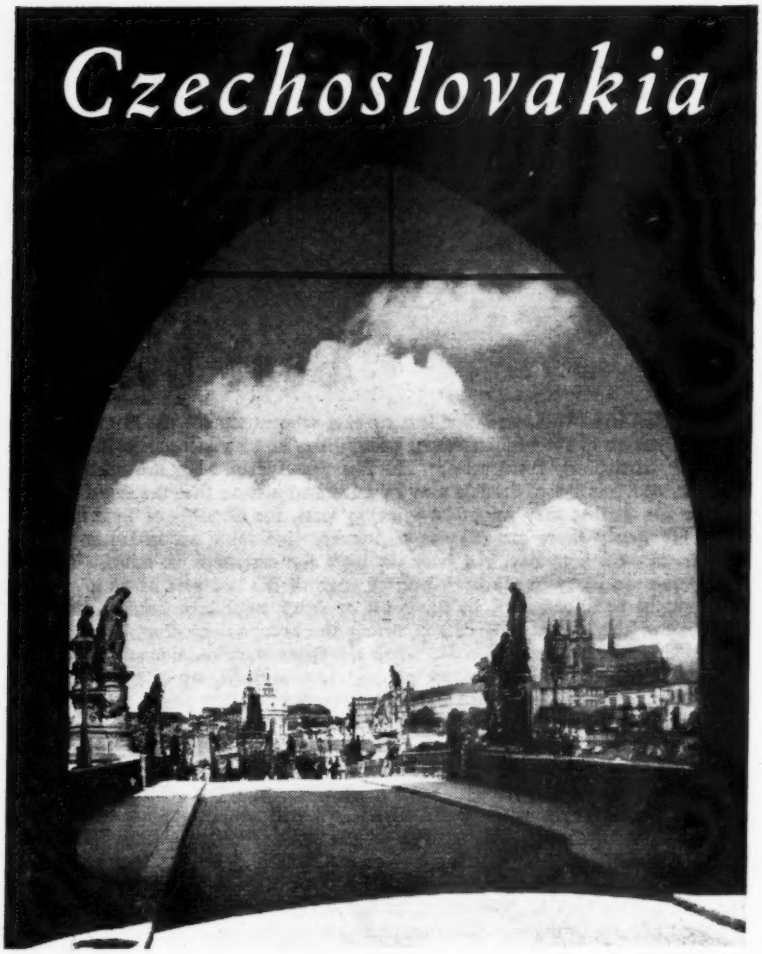
FEW days pass without the Editor receiving a reader's letter of complaint about police methods, the inadequate roads, the taxes on cars and their owners, the impotence of the motoring organizations and the like.

The staff of *The Autocar* are always ready to share readers' troubles and help where possible; when publicity to air a real grievance may lead to an improvement in the motorist's lot, space is found for it. But we cannot change the laws in a week, nor even the systems of taxation overnight.

Motorists, their numbers growing so fast, are rapidly becoming a very powerful body of citizens. If they believe there are injustices, then their big weapon in defence is their vote—and those of their families. Continue to write to *The Autocar* about everything to do with cars and motoring; but where appropriate write also to your M.P.

Czechoslovakia for the

DELIGHTS AND DIFFICULTIES IN OLD BOHEMIA



Prague—gate of the Bridge Tower leads on to Charles Bridge, a gothic structure ornamented with baroque statues

MOTORISTS who enjoy touring on the Continent may well find new pastures behind the Iron Curtain. My wife and I have just returned from a trip through the old Bohemian part of Czechoslovakia, as well as visiting Prague, with a wealth of memories and new experiences.

The excitement of not knowing what was before us added to the usual pleasant anticipation of a Continental tour. Naturally we tried to get as much useful knowledge as we could before we started, but this was not easy, as the A.A. had little information. We were told by the Czechoslovakian Consulate in London that a visa, which is essential, could be obtained only through their nominated agents. One is Fourways, near Westminster Bridge, and the other is Cedok, who have just opened an office in Oxford Street. Cedok is a large Czech Government organization which not only acts as travel agents, but appears to run most of the important hotels in that country. The cost of the visa is £2 10s, and at least 12 days are required for this to be obtained.

A carnet is required for Czechoslovakia, yet the first thing the Czech Customs asked for on arriving at their frontier was the car insurance "Green Card." Czechoslovakia does not appear amongst the countries listed on the Green Card, and the motorist should see that it is inserted by the insurance company or they will suffer the fate experienced by us—added delay and a payment to cover the insurance whilst in their country, equivalent to Kc.20. The customs examination of the car was much more thorough than we are used to these days abroad, but it was done in quite a friendly manner. The whole formalities took about an hour, probably because we arrived at the frontier at Cheb (Eger) which is not the most common entry point into Czechoslovakia. The approach to this particular frontier is rather forbidding, as there is a strong wall of barbed wire as far as you can see, obviously electrically wired.

Once inside the country we had the liberty of the roads in more senses than one, as they were practically deserted. We met a few lorries, even fewer cars, all apparently made by Skoda. Our attention, however, was mainly concentrated on the road itself, which was terrible. Our speed for mile after mile was reduced to less than 20 m.p.h. to avoid the bigger pot-holes—there were so many that it was impossible to miss them all. In justice, I must say that this does not apply to the main trunk roads, but only the roads in Bohemia near the frontier.

Towns and villages in this area showed a state of devastation which was quite shocking. A large number of the houses, factories and buildings are just ruins, either through bombing or other war damage, and it is doubtful whether the others had had a coat of paint since before the war. We began to think that we must have entered the country by the back-door! The scenery between the villages and towns, however, was beautiful, with dense pine forests, rushing streams, and a general appearance of untamed nature.

As it was now late afternoon, we decided to head for Karlovy Vary (Karlsbad). The roads were still very bad, but as we approached this once world-famous and fashionable spa, the road gradually improved until it became first-class.

Our entry into the town could not be described as unnoticed. Our car is a Morris Minor 1000 tourer, almost new, but a gold-plated Daimler could not have attracted more interest. When we stopped to enquire the way to our hotel, we were quickly surrounded by a crowd. We thought it might have been the G.B. plate, but when one of the onlookers asked permission to take a photograph from the front, we realized it was the car which they were interested in. We were asked dozens of questions, mostly in German, but it was surprising how many knew more than a smattering of English; we learnt later that many are learning our language. Our hotel was the once famous Hotel Pupp, now renamed Moskva, and knowing it had been one of the leading hotels in Europe, we wondered what we would find; when three uniformed porters came out to collect our luggage, we were suitably impressed.

There was no doubt that the hotel had kept its splendour, and without question was equal to any Grand Hotel in Europe. When we later entered the luxurious dining room, we were escorted to our table, on which had been placed a small silk Union Jack mounted on a marble base. The menu we were given was in English, and the size of a small newspaper. The food was quite on a par with the grandeur of the hotel, and served impeccably; the head waiter and the other waiters all spoke extremely good English. On one occasion, in the reception room, I asked my wife if she thought I could get an English

Holiday Motorist

Climbers descend a rough track in the Czechoslovak mountains. *As the map shows, the author travelled in the western part of the country*

newspaper, and the clerk, overhearing my remarks, produced a copy of *The Times*.

It is necessary to book and pay in London, before your departure, for hotel accommodation for the whole period of your stay in Czechoslovakia, and a visa is granted only for the number of days for which reservation is made. You have the choice of three categories of hotels—de luxe, first class and second class—the daily rate, including full pension, ranging from £4 9s for a single room with bath, to £2 3s for a single without bath. Rates for a double room cost a few shillings per person less.

If you move from one hotel to another, as we did by going on to Prague, the first hotel in which you stay provides a voucher on departure for the balance of the period reserved, plus cash at the rate of Kc.57 per person per day. This represents the pension part of the daily rate already paid, and means that the voucher covers only the cost of the room at your next hotel, meals being paid for separately; Kc.57 is sufficient for all meals in a first-class hotel or restaurant, if one is not too extravagant.

The official exchange rate is 20 Czech Crowns per £, but tourists receive a special rate of 40 Crowns. At this exchange rate the cost of most things to the tourist is still higher than in England, except perhaps for food. In most large towns, however, particularly those favoured by the tourist, there are special stores available only to visitors to the country, where a very large range of goods can be purchased at quite reasonable prices.

Petrol costs approximately 9s per gallon. The ordinary type seems very poor quality, if the smell from the exhausts of the Czech cars and motor cycles is any criterion, but the tourist can obtain vouchers from his hotel with which he can get a Super grade at the same price.

After a few days at Karlovy Vary we moved on to Prague, the capital, and sometimes known as the city of a hundred spires. It is a really beautiful city, of old castles, churches and buildings, interesting streets and squares, and in which you are never in doubt but that you are in a strange and foreign capital town.

We were received with friendly smiles and courtesy. Driving is not easy in Prague by reason of the number of one-way streets and, finding myself at some distance from the hotel, I asked a policeman the best way to get there. He opened the car door and asked in sign language if he could get in. Receiving a hearty affirmative, he guided us through a maze of streets to the entrance of our hotel, then got out, saluted and went his way.

Once again we found that the de luxe hotels are as good as any in London. English is spoken by all the staff, and they seemed most anxious to make us comfortable; they were pleased,

Park in a famous spa, at Marienbad

Czechoslovakian Tour . . .

no doubt, to have an opportunity to practise their English.

On a tram one day we had difficulty in making the conductress understand where we wanted to go. She immediately called out enquiring if anyone spoke English, and several people came forward to help. This is typical of the willingness of the ordinary people to help a stranger. Another instance of this was when we took to the optician a pair of reading glasses which had been broken. A careful examination of them was made, and a mechanic called to undertake the repair. After about ten minutes the glasses were produced, and tested; when we enquired the cost, we were told it was nothing at all, and that he was delighted to do it for us.

There are some lovely excursions in and around Prague. A favourite of ours was to go by funicular railway high above the city, and take lunch or enjoy a drink in an open-air restaurant where you have a bird's-eye view of this ancient town.

We left Prague with regrets, on our journey of about 100 miles to the frontier at Rozadov. The very good road passed through Pilsen, the home of the still famous Pilsner beer. The scenery was varied and extremely pleasant, with pine forests predominating. At the frontier we found that the customs buildings were larger and more imposing than those through which we had entered at Cheb, there were no signs of barbed wire, and very few formalities. They just stamped our passports, and retained the form on which all the details of our money had been entered—that is, the money in cash and travellers' cheques with which we had arrived, and the various exchanges of cheques for Czech Crowns that we had made during our stay. This form, by the way, is apparently considered quite important. No Czech money must be taken from the country, so we had taken the precaution of spending our Crowns before arriving at the frontier.

The examination of our car and baggage was a mere formality, and in about ten minutes we were through and on our way to Germany.

One important thing for the visitor to bear in mind is that there appears to be very little motoring in Czechoslovakia; even on main roads, often we drove up to four or five miles without seeing another car. In consequence, services available are on a limited scale. In towns and larger villages there is a petrol pump, and approaching Prague we noticed one or two petrol stations with two or three pumps, but it is not advisable to let the petrol tank level get too low. In the large towns doubtless repairs would be undertaken, and a limited range of accessories would be available. New tyres can be bought, but to get a particular size might involve quite a search.

Road signs are of the usual Continental type, but they are few and far between. We had little difficulty in finding our way, as towns are signposted, and sometimes even bear a road number. It is not so easy in towns, but the nearest pedestrian will be very anxious to help. Maps are available, and here the nearest Cedok hotel or bureau will be of service.

We found the food similar to that of Germany and Austria, and very good. Tea can be ordered, but usually is so weak it has practically no colour; fortunately ours was always served very hot, which enabled us to add some of our own tea to the pot. The coffee, on the other hand, we found somewhat strong to our taste. Fresh cream is very plentiful, and is served with most desserts and with ice cream.

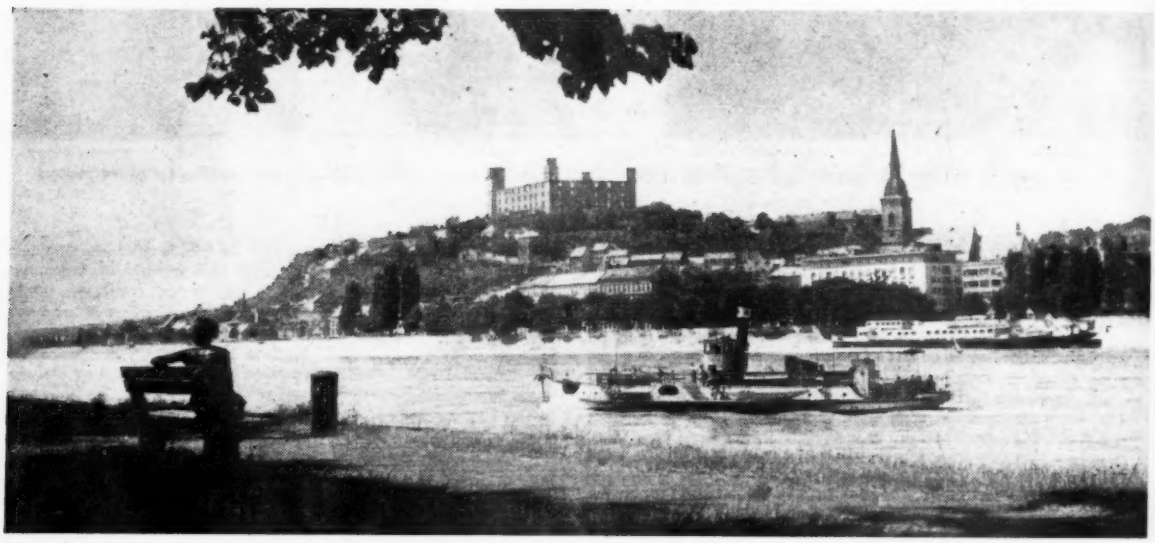
Beer appears to be the most popular drink and, as it is usually Pilsner lager, served ice cold, it certainly merits its popularity. Czech or Jugoslavian wine is easily obtainable at hotels or restaurants. Beer costs about 1s per bottle, and wine from 5s to 10s. English or American cigarettes cannot be procured, and Czech ones are a poor substitute for Virginian.

In Prague and other large towns there are many cafeterias, which remain open quite late. These are large, very clean, and offer a large variety of savoury snacks, and even cooked dishes at quite reasonable prices. The snacks include ham, a variety of sausages, cheese, and eggs generously garnished with caviar, and a good quick meal can be obtained without any language difficulties. Beer and coffee are also available.

The hotels are good—the de luxe would merit five stars in any country, and the first and second grade not less than two stars. When touring it is advisable to book accommodation in advance, and this can be done by the Cedok staff at the hotel, who will telephone to the town you are heading for, and reserve rooms on your behalf. Except for some of the hotel staff, tipping does not seem to be expected or encouraged, and no service percentage was ever added to our hotel or restaurant bill.

Our Minor 1000 had done little more than 1,000 miles when we started off, and we did not have the slightest trouble or the remotest cause for anxiety at any stage of the journey. Petrol consumption for the whole of our trip averaged just over 40 m.p.g. We had the engine oil changed in Germany, and saw that the battery was regularly topped up. The tyres retained their correct pressure throughout. Fortunately, we had little occasion to put the hood up, so could enjoy to the full the good air and beautiful scenery.

H. G. WRAY.



The blue Danube—but not in Austria. Here it flows through Bratislava, the Czechoslovakian capital, below the castle on the heights and, near its brink, stands the Cedok-Devin Hotel, one of the most modern in the country

News and Views

Cheaper Manumatic Minxes

A REDUCTION of £12 10s has been made in the basic price of the Manumatic transmission for Hillman cars. The new price is £25 basic, total including purchase tax £37 10s. It is available on the Hillman Minx de luxe, the convertible and the estate car.

New Route to Moscow

BRITISH car and coach tourists may now travel through Finland and Leningrad to Moscow, the Automobile Association reports after negotiations with Soviet Intourist officials in Moscow. A spokesman said: "Ten tours in Russia ranging from seven to 27 days are now available. The opening of this new route in time for the second main touring season means that cars and coaches can be shipped a great part of the way, thus saving the long drive across Europe."

The Finland-Moscow-Finland tour, of 12 days, will cost 750 roubles first class by car and 540 roubles tourist class, at around 12 roubles to the £. For coach parties there are three prices: 720 roubles, 480 roubles and 420 roubles. The itinerary for the tour includes sightseeing in Leningrad, Novgorod, Kalinin and Moscow. Visitors to the capital will be shown the Kremlin, underground stations, two exhibitions and an art gallery, and will spend three days in the city.

"All-in" cost of the tour will include meals and hotel accommodation, excursions, parking and the services of a guide-interpreter throughout the 12 days. Visas are necessary.

Dutch DAF

THE DAF Automobile Works of Eindhoven, Holland, have announced that they will take up a loan of 27 million guilders from institutional investors and the Rotterdam Bank, for the purpose of financing the purchase of engines for the serial production of the new DAF car. The concern has also bought another 57 acres of land, bringing the total of the factory sites to approximately 175 acres.

Pump Colours Changed

NEW petrol pump designs incorporating a white front panel, and yellow side panels with globe holder, globe neck, radial arm and base in black, have been adopted by the National Benzole Co., Ltd. They form part of the company's programme to improve and modernize filling stations.

Janus Future in Doubt

FOLLOWING purchase of the Zundapp company—makers of Janus cars—by Bosch Car Accessories of Stuttgart, it remains uncertain whether Janus production will be discontinued or transferred.

Rolls-Royce Meet in Canada

DURING the weekend of 8, 9 and 10 August the seventh annual meet of the United States Rolls-Royce Owners' Club will be held at Montreal, Canada. More than 150 pre-war Rolls-Royces are expected to take part in the conclave.

Price Tag Bill in U.S.

CARS delivered to dealers in the United States will in future have to carry a label showing make, model, serial number, final assembly point, and "suggested retail price." This is laid down in a new Bill, signed by President Eisenhower, which has the support of the major U.S. car manufacturers, and is applicable to both domestic and imported cars. Optional accessories must also be listed, and there must be a breakdown of the delivery charges and other sums included in the selling price.

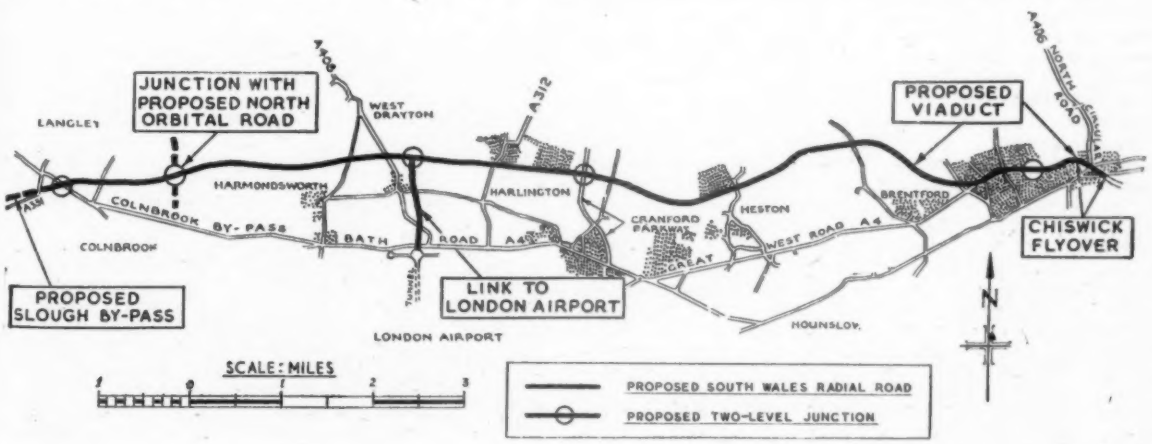
WESTERN MOTORWAY

LAST week the Minister of Transport published particulars of the Western Motorway, which is to be constructed between the Chiswick flyover, London, and the projected Slough-Maidenhead By-pass. Details of the first part of the motorway were announced in March this year, stating that the road will run on piers above the existing Great West Road, in the same way as the Sainctelette Viaduct in Brussels. This section will be the first mile of the road to the west from the Chiswick flyover at the junction with the North Circular Road. The motorway will then diverge to the north-west, passing over a factory, and descend gradually to ground level within half a mile. It will continue, with controlled access, for a further ten miles to the beginning of the proposed Slough-Maidenhead By-pass.

In the sketch map below is shown the dual carriageway spur road leading off to London Airport, which will be linked to the motorway at a flyover crossing. There will be another flyover at the junction with the proposed North Orbital Road at Richings Park, and another at the end of the motorway, forming a non-stop link for traffic continuing west.

The new motorway will form the first stage of the projected London-South Wales Radial Road, and will additionally provide a much-needed fast route to London Airport.

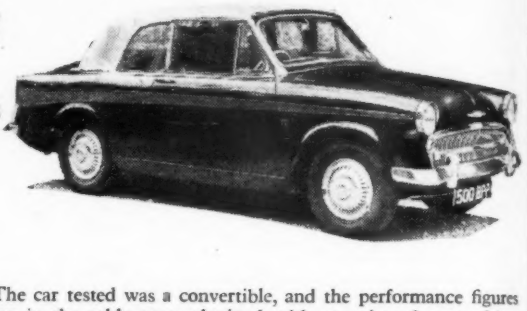
It is stated that "it is not possible to say when work may start on the road . . . but the Minister attaches the highest priority to the scheme."



SKETCH PLAN of the first 12 miles of the Western Motorway which will start from the Chiswick flyover (see left)

IMPROVING THE PERFORMANCE OF POPULAR CARS

PART 3 OF A NEW TEST SERIES



The Hillman Minx

WHEN two or more models in a manufacturer's range have many common components, one advantage is that it sometimes helps those who seek increased performance to judge whether a model is suited to such attention. An example is the Hillman Minx, for the basic engine of this car, fitted with twin carburettors and with a raised compression ratio, is used to power the more sporting Sunbeam Rapier. From this it can be concluded that there is a sufficient factor of safety in the Minx engine to withstand a raised power output without the likelihood of rapid wear or over-stressing.

In addition, the Rapier Series II has the bores enlarged from 76.2mm to 79mm, increasing swept volume from 1,390 c.c. to 1,494 c.c. Inlet and exhaust valve head diameters have been increased, and gross power output is 73 b.h.p. at 5,200 r.p.m. compared with 51 b.h.p. at 4,400 r.p.m. for the Minx engine.

A strong point in favour of tuning the Minx is that the car weighs nearly 2 cwt less than the Rapier, but has the same final drive ratio, indirect ratios (except first), and tyre sizes. Therefore, if power and torque are raised to about the same level as those of the Rapier, an even better performance than that of its sporting relation could be expected.

This has been the target of the originators of the two conversions under review—Michael Christie and George Hartwell. Both are well-known in the competition world, of course, Christie mainly in hill-climbs, and Hartwell in rallies, particularly the Alpine, in which he has been very successful with Rootes models. Michael Christie, head of Alexander Engineering, has found his Minx conversion to be probably the most popular he has done. In detail the work carried out is as follows:

The standard cylinder head is modified by enlarging and polishing the inlet ports, the combusion chambers also are polished, and the compression ratio is raised from 8.1 to 8.6 to 1. Also the ports in the existing exhaust manifold are worked on to improve gas flow. A cast, light alloy induction manifold with two 1¼in semi-downdraught S.U. carburettors is fitted, with a balance pipe between the two separate inlet tracts for the front and rear pairs of cylinders. Each carburettor has an individual pancake-type air filter. To make room for the carburettors, the battery is moved to the offside corner of the luggage boot which, as well as getting it away from engine heat, slightly alters the weight distribution.

These modifications increase gross b.h.p. from 51 at 4,600 r.p.m. to 68 at 5,000 r.p.m. The figures apply to the Series I Minx and this model, converted by Alexander Engineering, was the subject of a Road Test in *The Autocar* of 30 August 1957. Although it has been superseded by the Series II Jubilee range, the only difference of note in the engine specification of the standard car is a new camshaft which, although not increasing the maximum b.h.p., improves maximum torque from 69.8 lb ft at 2,400 r.p.m. to 72 lb ft at 2,200 r.p.m. and gives a small increase in torque throughout the engine speed range.

A central gear-change replaced the standard one on the steering column of the converted Minx, and a Laycock-de Normanville overdrive, which could be operated in third and top, was fitted. Both are available from Alexander Engineering (either fitted at the works or in kit form) and the break-down of prices for these and the engine conversion, together with fitting charges, is as follows:

	£	s	d
Engine conversion	47	10	0
Fitting charge	10	10	0
Gear change conversion	10	0	0
Fitting charge	3	18	0
Laycock de Normanville overdrive	68	0	0
Fitting charge	12	10	0

The car tested was a convertible, and the performance figures given in the table were obtained without using the overdrive. Corresponding figures for the standard Series I Minx and the Series II Sunbeam Rapier are given for comparison. It will be seen that this converted car yielded acceleration figures which differed very little from those of the latest Rapier, and the mean maximum speed was only ½ m.p.h. lower.

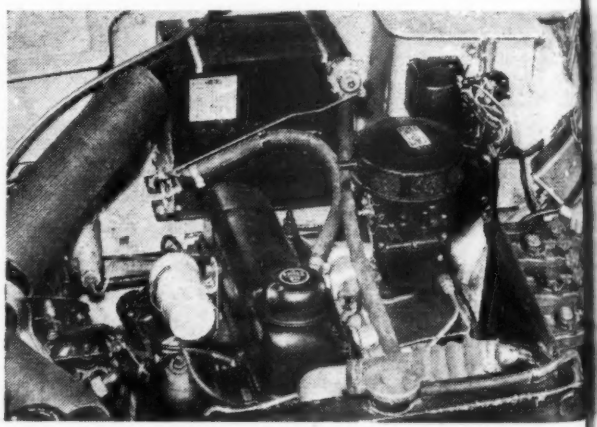
Road behaviour was praised, on the score that there was no loss in either smoothness or flexibility. Starting was easy from cold, but the weather was mild during the test; when the engine was hot, a first-time start was not always obtained. There was a slight increase in engine noise, but otherwise little to indicate that a performance conversion had been carried out. It was possible to make a satisfactory get-away in second gear, first being treated as an emergency gear only, and the car would pull away smoothly from 10 m.p.h. in top gear.

Placing the battery in the boot altered weight distribution sufficiently to improve the handling to some extent, and the car could be cornered energetically without running into trouble. Heavy steering at low speeds—a criticism of Minxes at that time—was attributed to the unusual P-type steering gear, with much of its mechanism exposed. This heaviness showed up on both of the converted test cars. It has been found that extra care in mounting and assembly can overcome this trouble. A conventional Burman F-type recirculatory ball-type steering box is employed on later cars.

Some brake fade was experienced during performance testing, but this was not considered very serious. Alexander Engineering were not satisfied at that time with brake performance, and have adopted different linings to cope with harder driving.

Rootes approve the Alexander conversion with one reservation. Their guarantee holds, except where failure of a part can reasonably be attributed to the increased engine performance, in which case it is invalidated so far as the replacement of that part is concerned. The latter is covered by a guarantee from Alexander Engineering.

Externally, the bored-out engine of the Hartwell conversion shows little difference except for the Stromberg carburettor, which replaces the Zenith instrument, and a new, light alloy inlet manifold



On the conversion by George Hartwell, Ltd., of Bournemouth, of a Series II Minx saloon, a single carburettor has been retained. The normal Zenith instrument has been replaced by a down-draught Stromberg of the type that is fitted to the Series 1 Rapier. It is mounted on a new, cast, light alloy manifold, which consists of two roughly semi-circular passages, one feeding the inlet ports of cylinders 1 and 4, and the other cylinders 2 and 3, both tracts lying in the same horizontal plane.

In the cylinder head, the inlet ports have been opened out and polished, and inlet valves with a head diameter of 1⅛in are fitted. Again, this is the same size as on the Series 1 Rapier. Also, the compression ratio is raised to 8.9 to 1, but the most important modification is that the cylinders are rebored to 79mm, giving a swept volume of 1,494 c.c., and the latest Rapier pistons are fitted. Big-end bearings as used on the Rapier Series II are substituted for the standard Minx shells. The price of these modifications, which can be carried out only at the works (35-41 Holdenhurst Road), is £52 10s, including fitting.

On the road, greatly increased liveliness was at once apparent —accompanied by greater noise—and a peculiarly hard though satisfying feel about the engine. The most outstanding feature of the performance, however, was the greatly enhanced acceleration in top gear. A figure which bears this out particularly is that from 50 to 70 m.p.h., which takes 25.5sec on the standard Minx, but only 13.5sec on the Hartwell conversion. This improvement was not confined to the higher speeds, and the engine was extraordinarily flexible, accelerating strongly from 20 m.p.h. in top gear, which meant that roundabouts could be negotiated easily without the need for changing down. There was no pinking on premium fuel, but this engine tended to "run on."

Free use of the indirect gears gave impressive acceleration, which was particularly appreciated above 30 m.p.h. in third, for example, and the seventies were reached remarkably quickly in top. Torque was sufficiently high to just spin the wheels on a dry road, starting in the low first gear. The only sign of harshness was at about 60 m.p.h.—it was heard rather than felt —and this smoothed out at 70 m.p.h. The steering column gear change was quite good of its type, though the change from second to third gear was slow. A central remote gear change can be fitted, costing £21 10s, plus an installation charge of £4 10s.

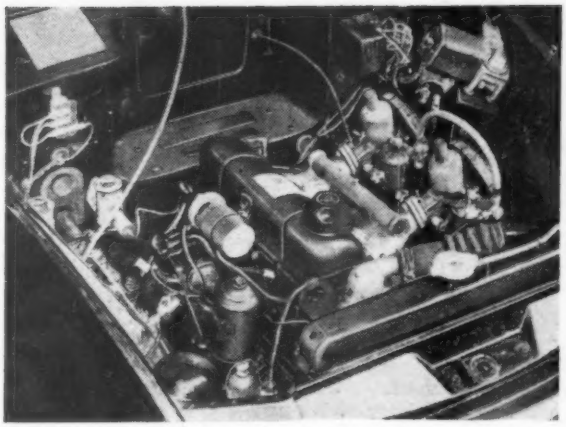
Road-holding and steering did not seem to be quite up to the increased performance now available. The rear axle became rather lively at about 70 m.p.h., and its pattering could be felt quite plainly through the driving seat. Tyre squeal was very easily induced, and the rear end tended to break away rather too easily on wet roads. Higher rate road springs may be fitted for rally work and the dampers re-set.

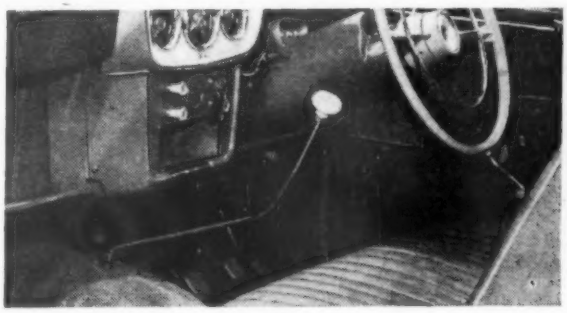
Some brake fade also was experienced with this car, and it is as well to bear in mind, when considering either of the conversions tested, that larger brakes are fitted on the Rapier—10 × 2¼in front, 9 × 1¾ rear—compared with 8 × 1¼in all round on the Minx.

Fuel consumption varied from 24 m.p.g. to 33 m.p.g., depending upon the method of driving, the worst figure being produced by full use of the revs in the indirect gears, alternating with driving in heavy town traffic.

This conversion is referred to by Hartwells as their stage 3; work to stages 1 and 2 can be carried out for £17 10s and £27 10s respectively. In both of these, the compression ratio is raised to 8.5 to 1, and varying amounts of work are done on the cylinder head and the standard inlet manifold.

D. M. P.





Above: On the Alexander conversion, the battery is moved to the boot to make room for the twin, semi-downdraught S.U. carburettors mounted on a new manifold with balance pipe. Below: A central gear-change is available from Alexander Engineering to replace the column lever

PERFORMANCE TABLE

	Standard Minx Saloon (1956)	Alexander Engineering (1,390 c.c.)	George Hartwell (1,494 c.c.)	Standard Rapier Series II
	sec	sec	sec	sec
Acceleration from rest through gears to:				
M.P.H.				
30 ..	6.7	5.7	5.4	5.6
50 ..	17.6	13.5	13.6	13.1
60 ..	27.7	18.9	18.7	20.2
70 ..	46.1	28.1	27.4	28.3
Standing start quarter-mile	23.5	21.6	21.5	21.1
From constant speeds				
20-40 m.p.h. in **3rd**	7.9	7.3	5.9	7.3
20-40 m.p.h. in **top**	12.2	12.4	10.5	11.1
30-50 m.p.h. in **3rd**	10.6	7.8	7.3	8.0
30-50 m.p.h. in **top**	15.0	12.3	10.8	11.7
40-60 m.p.h. in **top**	17.5	13.7	11.9	13.1
50-70 m.p.h. in **top**	25.5	16.8	13.5	16.7
Maximum speed: mean m.p.h.	77.5	89.5	82.5	90.0
best .. .. m.p.h.	82.7	92.0	83.3	—
Overall fuel consumption m.p.g.	34.3	26.8	27.7	31.5*
Weight as tested cwt	22.5	22.9	22.8	24.4
Price of conversion (including fitting)	—	£58	£52 10s 0d	—
Price per 0.1 sec improvement in time for standing start quarter-mile	—	£3 1s 0½d	£2 12s 6d	—

*Overdrive used.

Disconnected Jottings

BY THE SCRIBE
Barry Appleby Drawings

Free Houses

IT is not the aim of real motorways that they shall make possible high speeds, valuable only to the express fraction of traffic; the main idea is that they should provide uninterrupted flow for traffic, in contrast with our fouled-up main roads. Perhaps these should be spelt m.a:i;n-r'o/a"d(s? as they are, so to speak, more punctuation than words. Besides being free of too many side-turnings, they should not have many places where vehicles leave and rejoin the traffic flow.

So it is good news that filling stations on motorways are to be universal ones, selling all kinds of petrol. I have never liked solus sites—one station, one brand—because it makes them too numerous.

With a small revision of regulations, it should be possible to take the thing further, so that filling station, café, public house, wayside fruit stall and the like are combined.

Fair Top Layer

THAT reminds me of a little racket to which motorists are exposed. The wayside seller of fruit may be the local grower, though it seems odd that full retail shop prices always seem to prevail. But he and his chums are sometimes spivs, with a city registration number on the old van, selling throw-out stuff from the great markets and the street barrows, camouflaged by a top layer of fair fruit. Have a good look.

Camouflaged

Monotony

ALTHOUGH English catering (where it is to be found) has improved in quality, it has not lost its infernal monotony—tomato soup; fried plaice; roast beef, with the small yellow square of indiarubber called Yorkshire pudding by Southerners. There are no other soups, no other fish, although the slabs of the local merchants bear all sorts of exotic and interesting things.

"Motorists have a split mind about this," a hotel manager told me. "In their own country they deeply resent any departure from standard. Yet over dinner you can hear them recalling with relish the exotic and interesting things they have eaten abroad."

Stimulated by this conversation, he served us for lunch with what looked like a whole giant goldfish, grilled, and this was excellent.

No other soups

Dangerous Material

EVERYONE will remember that rather pointless shipyard strike which lasted so long. It concerned drilling holes in plywood panels which had an aluminium facing; was it woodworkers' or metalworkers' work? Something of the kind has cropped up in the motor industry in connection with plastic panels used in place of steel panelling. However, all may be well. I quote from *The Motor Trader*:—

> It was decided to ask the employers' United Kingdom Joint Wages Board to seek a conference with the National Union of Vehicle Builders and the National Union of Sheet Metal Workers, aiming at a national agreement concerning allocation of the work between the two unions.

I do not want to appear as an agitator; but I should have thought plastics were produced chemically, and that they were often based on coal, or oil, and glass fibre. If the conference is to produce a shot-proof solution, perhaps several more unions should be involved.

Pitch and Bump

A THAMES-SIDE spot popular with motorists has a road with a bad surface, featuring quite deep potholes, although it is tarred. This reduces the cars to a crawl, the older ones, with token suspensions, inching along in bottom gear, slipping the clutch and proceeding at less than a walking pace.

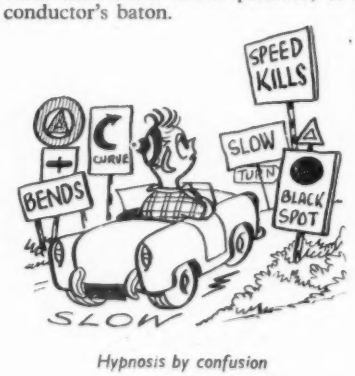
But such slow speeds are not practical in foreign touring where the itinerary may include hundreds of miles of such roads. With a modern suspension, there seems to be for each rough road, an ideal speed. If you go too slowly, the car makes extreme movements, and seems to be using the entire up and down travel of the suspension. If the speed is too great, there is an uneasy feeling that the tyres are getting a hammering and that something in the chassis will break under the enormous shocks transmitted, although there may be a level ride and passenger comfort. The ideal speed seems to be that at which the ride just flattens out, and the car, out of rhythm with the bumps and potholes, neither pitches nor hammers.

When ships find themselves in harmony with the waves, they pitch in the most drunken manner, and speed is increased or reduced until ship and rollers are out of phase again.

Haulage

YOU know the regulation that you must not carry goods in connection with your trade or business, in a vehicle licensed as a private car? Well, I see that a musician has recently been fined for carrying his double bass.

I have often felt in jeopardy from these regulations. What about a portable typewriter carried by a journalist? Or even a fountain pen? Presumably there would be an offence if the professional melody-maker carried one of those little flutes called piccolos, or a conductor's baton.



Hypnosis by confusion

Blinded by Signs

I NOTICE that a further rash of instructions and exhortations to motorists has broken out on the roads. Those concerned with safety are well-meant, I am sure, though the slogans and jingles are sometimes stupid, and others are aimed at those of low or childish mentalities hardly likely to be found at the wheel of a car. The risk with so many signs is that through a combination of familiarity, irritation and eye-strain motorists will come to ignore the lot.

Left: Plastic stick-on transfers for foreign touring. Right: Webasto sun roof conversion on a Vauxhall Victor

Accessories

Sprite Hard Top

A DETACHABLE hard top for the Austin-Healey Sprite is introduced by Universal Laminations. Of ¼in Fibreglass-resin, it is covered outside with any of twelve colours of p.v.c.-coated hood material, and inside with cream or grey washable plastic, piped to match upholstery. An interior light is installed. There is a very wide rear window, of ⅛in Perspex. Water gutters and rear window surrounds are of polished aluminium.

Two chromium-plated and threaded fastenings secure the top to the windscreen, and there are two plated hook brackets at the rear, tightened by plated bolts. The top seats on the body through an extruded rubber section, finished with a polished aluminium bead. The whole thing is both secure and weather-tight.

Metal frames, p.v.c. covered, hold Perspex windows which slide in felt-lined polished aluminium channels. Existing side screen mountings are used; but deep recesses are made in the hard top round the door openings, to take the screens, and these are sealed with soft rubber. In fact, the design as a whole is marked by careful attention to sealing.

The makers are Denis Ferranti Laminations, Ltd., 58, Holland Park Mews, London, W.11. The price is expected to be between £45-£50 for the hard top, and £12 10s for the side screens. There may be another version of the top, receptive of painting in car finish.

Side Garages

BESIDES normal home garages—of concrete sections, timber and asbestos, or steel—Park Lines, Ltd., are making lean-to models, which fit against the side of a house, saving the cost of one wall, and providing strong support; so these garages are inexpensive. There are versions to go either to left or right of a house, and they are easy to assemble.

The Northwood, steel-framed and asbestos-panelled, has steel-framed windows as an extra. Prices are: 14ft 1in by 6ft 8in, £47 10s; 16ft 1in by 6ft 8in, £53 5s; 14ft 1in by 7ft 8in, £50 5s; and 16ft 1in by 7ft 8in, £54 10s.

The Langham has wood framing. Clapboard or corrugated iron can be supplied at no extra cost to cover the frame, instead of the asbestos panels, though the former may be against local planning regulations. Sizes are: 14ft by 7ft (£44 2s 6d); 14ft by 8ft (£48 5s); 14ft by 9ft (£52); 15ft by 7ft (£46); and 15ft by 8ft (£50 5s).

All garages have a minimum height at the low side of 6ft. Doors are wooden. Windows and small side or rear doors are extras.

Plans for submission to local councils for building permission are available.

The company's address is Park Lines, Ltd., 717-719, Seven Sisters Road, Tottenham, London, N.15.

GB Stick-ons

STICK-ON transfers instead of metal GB touring plates are a sensible idea. The latest comes from the Carolite Manufacturing Co., 51, Crutched Friars, London, E.C.3. It costs 3s 6d. The adhesive of the backing seems strong, and the glazed (or plastic) stick-on should be weather-resistant and easy to clean.

There is also a decorative shield, based on the union flag, and carrying the GB letters. This is for the patriotic: it is not a legal substitute for GB lettering.

Victor Roof Conversion

A WEBASTO opening roof conversion has been carried out on a Vauxhall Victor by K.J. Motors, Ltd., 137-149, Widmore Road, Bromley, Kent. The great length of the opening from the rear seats is noteworthy. The car, harvest yellow with black roof, has non-standard finish, and Ace-Mercury discs.

The Webasto roof conversion, of German design, is a product of Car-Coverall, Ltd., Regent Street, London, W.1. Installations by appointed agents cost £65-£75, according to the car model.

Spanner Sets

THAT serious deficiency of standard toolkits—provision for work on the electrics—is met by a new Athol set, in a red plastic folder. There are five plated, high-tensile spanners. Double-ended, they cover all BA sizes between 0 and the tiny 10 BA. There is also a little screwdriver with a good blade, and a pair of thin-nosed electrician's pliers. The set costs £1 3s 3d.

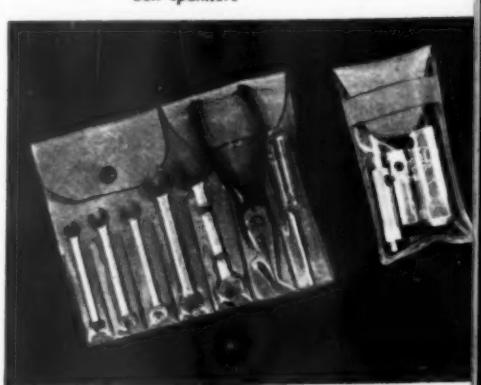
Another useful set, in plastic wallet, has 9, 10, 11 and 14mm box spanners, plus a spanner for 14mm plugs, and a tommy bar. This is 7s 6d.

The makers are Heath and Pond, Ltd., 445, Moseley Road, Birmingham, 1.

Detachable hard top for the Austin-Healey Sprite

Lean-to garages for erection against the side of an existing building

An Athol BA toolkit, and a set of nesting box spanners



Above: The Stelvio, lacet upon lacet of timed ascent, where Ballisat's Triumph TR3 made f.t.d. Right: Lola Grounds (at the wheel) and Mary Handley-Page (Sunbeam Rapier) lead Harper's sister car through Edolo

Toughest Alpine

ONLY 25 CARS FINISH OUT OF 58 STA

ONE of the most outstanding International rally performances by one make of car was achieved by Alfa Romeo in the Alpine rally—the Coupe des Alpes, organized by the R.A.C. de Marseille et Provence. Giuliettas took the first three places in the general classification, with French crews in the first two and German in the third. They, therefore, also won three of the seven Alpine Cups which were awarded, after the results of one mountain test had been set aside and those of two other climbs relegated for use only in deciding ties.

Keith Ballisat won a well merited fourth place for Triumphs with Harrison (Ford) fifth, Peter Harper (Sunbeam), sixth, and W. Shepherd (Austin-Healey 100), seventh. Only these competitors won Alpine Cups out of the 58 starters.

Pat Moss and Ann Wisdom, in another of the Austin-Healeys to finish, won the ladies' prize. In addition, four out of the six classes were won by British cars and crews. In this exceptionally severe event only 25 cars finished, and although it was the French event counting for the Rally Championship, only one French car finished the course—an ID 19 Citroen, which was in an almost incredibly battered state.

WITHOUT DOUBT the Alpine Rally is one of the most formidable motoring events of any type in the international calendar, and a study of this year's routé, which was published well in advance, indicated that the "impossible" schedules of the past were now to become almost miraculous.

This premier French rally which counts for the European Rally Championship received an initial entry of but 64 cars, of which only 16 were French, while the British runners numbered 40. The remainder were made up of very small numbers from other European countries and one American Austin-Healey.

Speculation on this lack of French support before the start in Marseilles embraced two possibilities. One was the number of French rally drivers who were giving greater attention to the racing weekend at Rheims before the Rally—of whom only French rally champion Claude Storez decided to get an early 'plane on the Monday morning in time for the 2.30 p.m. start. The other suggestion was that the French, who are for the most part much better acquainted with the roads involved, felt that over such testing terrain, luck might prove a more potent factor than skill.

As the cars came to the line, the extent of the entry could be judged for the first time; the organizers appeared not to have more than a list of cars and names, frequently unconnected with each other, and here and there having no relationship at all with the numbers on the cars themselves. It seemed that there were in fact 58 starters, of which the major proportion were British.

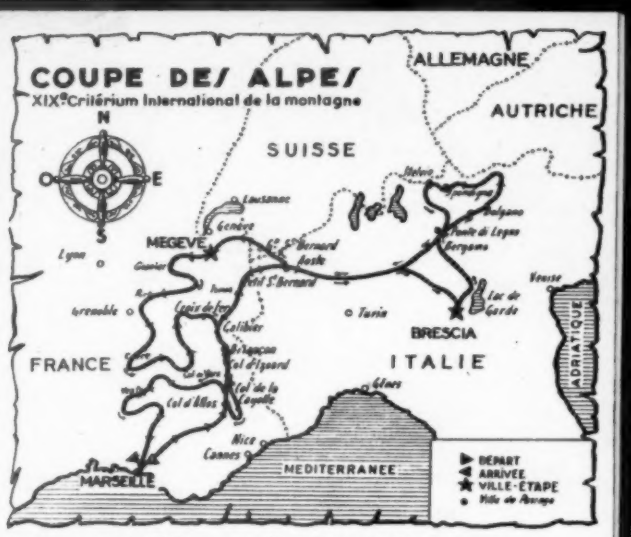
British manufacturers had again taken their Alpine very seriously, no doubt because any car which can survive such punishment automatically earns a niche in the records of great ordeals, and deserves all the attendant publicity. Of the British entries, Ford Zephyrs and Sunbeam Rapiers accounted for six each at the starting line, with no fewer than nine Triumphs including foreign entries (one TR2, the rest TR3s), nine Austin-Healeys (including three Sprites), three Rileys, three A.C.s, an Austin A.105, an Aston Martin, a 3.4 Jaguar and the last-minute entry by C. Corbishley of a very potent little Standard Ten.

Factory tender cars were to be seen, carrying mechanics and extensive supplies of spares. These factory men made the last-minute adjustment to their competitors' cars, then went off to loop from one crucial point of the route to another. There was little doubt that this ghost army—the only followers without rally plates—would have their resources tried to the limit.

It is difficult, almost impossible, to appreciate the severity of the Alpine from anywhere other than on the spot. Soon after leaving Marseilles competitors are in alpine country and, while many of the passes familiar to tourists are incorporated in the rally, most of the route covers territory which the normal driver never sees. These out-back cols are as similar to, say, the Col des Lecque as Bwlch-y-Groes and its other Welsh counterparts are to a good main road.

Take the Gavia pass in Italy, which was

Passo di Stelvio: Frank Grounds' Austin A.105 (left) breasts the tortuous climb, and (right), Jack Sears' Austin-Healey 100-Six on its way up—to finish fifth in its class and put up f.t.d. at Marseilles



Reiss' Alfa Romeo Giulietta Berline picks its way through the dock area of Marseilles at the start of the Rally—eventually to finish third in the general classification. Right: The route—as seen in the regulations

to be tackled by competitors after their climb over the better-known "easy" Stelvio. Crossing this *passo* involves 25 miles of motoring on a rutted track very little more than a car's width. To one side the irregular, jagged rock face threatens cut-and-thrust; to the other beckons the valley floor, which may be more than a thousand feet below. The "road" calls for second and third gear all the way—or first and second on a three-speed car—and the loose grit and mud which passes as a surface is unpredictable.

Out of the 25 miles, some 12 miles consists of nothing but hairpin after hairpin, of a steepness and tightness which result in success at first go, hitting the bank, or a shambles of trying to get restarted after backing down on the mud to within a few inches of the inevitable chasm. And the competitors have to achieve an average speed little short of 25 m.p.h.

This pass was but one of the 70 listed, named cols which Alpine competitors had to cover in nearly 2,000 miles from, and back to, Marseilles, all in five days with but two rest periods (at Brescia and Megève). The first was a few miles outside the sprawling ocean port where, in hot sunshine, competitors passed through Gemenos to the north-east of Marseilles and faced the narrow, rock-enclosed climb of the Col de l'Espigoulier. The crowds of spectators could see a dozen or more hairpins at a time. First up was the pale green Triumph TR3 of Hopkirk and Scott, then the Aston Martin of Key and Routley. Many British entrants followed, but none at that stage was more entertaining to watch, quicker or more adroit, than the French girls—the Mlles. Soisbault and Gornine in a works-entered TR3.

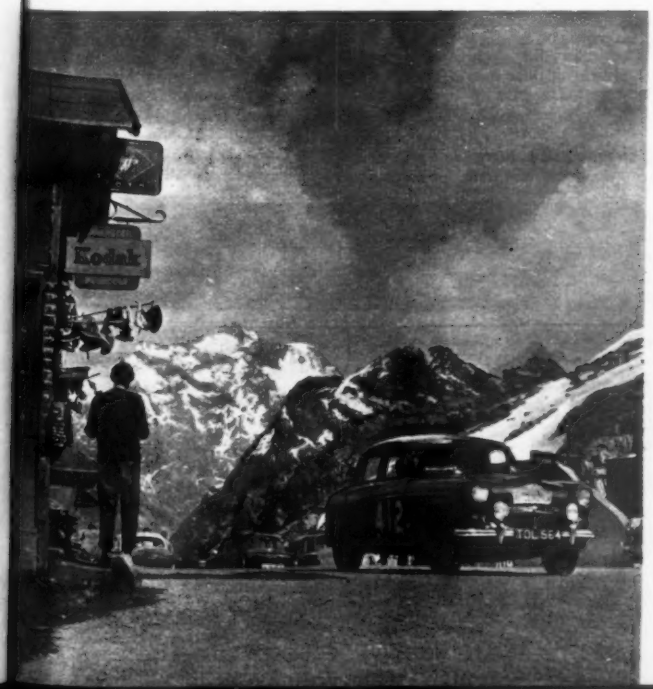
From start to finish the police were serving at marked points and turnings, to direct cars and control spectators; every junction was manned, and priority provided for competitors. Hidden side turnings could not be missed during the day for this reason, and often the night-time routes were equally well signalled—except in the exacting wilds.

As the rally moved through St. Maximin a crowd obscured even the turning required. Again the police helped. The Rapier of Baxter nearly took the wrong road but, with the help of the police and a violent swerve, carried on accurately, easing the route-finding for Bueb's similar car, which was in close company.

Control 1 was on this north-east route after St. Maximin at Barjols; early days still, as Gatsonides drove his much-tuned TR3 in and out with little sound and no fuss. The route continued on second-class roads, and already there were signs of cracking—unexpected stops were made by one or two cars. In the little, narrow streets of the villages competitors' behaviour was exemplary; they were keeping their really fast driving for later. Through Riez, again to the north-east, car after car passed without offending the interested oldest inhabitant, although the exhaust note of Storez' Porsche caused some comment.

A little later there was dismay in the Austin-Healey camp, when R. Brookes thought that his Sprite was overheating, only to find, however, that it was the

8 STARTERS • NONE ACHIEVE ORIGINAL SCHEDULE



Left: Outright winner, Consten's Zagato-bodied Alfa Giulietta, seen near Berzo on its way to the rough and treacherous Vivione Pass. Right: Second of the successful Giuliettas, Clarou's Berline, heads for La Morte on the Friday evening

Toughest Alpine . . .

thermometer which had gone out of action. Then the D.B.-Panhard of Fabre fell out with engine trouble, and between Digne, on the popular Alpine route to the French Riviera, and Barcelonnette, Dr. Dudley Barker's 1.5-litre Riley went out after the left rear hub oil seal had failed.

Competitors were heading indirectly for Monza, where there was to be a special speed test round the road circuit, but as they approached Barcelonnette they had to turn south to undertake a vicious loop to Annot and back, using different tracks on each leg. The loop was scheduled to take three hours, but the road conditions were so bad that the number of entrants was further reduced, even though the rally was less than a day old. The most noteworthy was, perhaps, Maurice Gatsonides, the expert, Dutch Monte Carlo winner, whose TR crashed quite badly after a brake pipe fractured. It was towed by a recovery truck in to Barcelonnette, but at least "Gatso" was not seriously hurt.

The cars at this stage were well up in the mountains, where the scant, fleecy clouds crowned the peaks; the sun poured from a predominantly blue sky—the visibility was perfect, but casualties continued. By the time competitors reached Barcelonnette they were driving at much higher speeds; though still precise, still safe. But now they were hard pressed to hold station, and police signals helped them to go at very high speed through the villages, often snaking viciously between the close-set houses. TR3s, previously decorous, were now raucous—to the delight of the big turn-out of inhabitants. Storez drove quietly for once running into Barcelonnette, for he had his own rendezvous here, turning his Porsche off the route for a quick check-up.

A brief spell of *route nationale* followed, the cars taking N100 towards the Italian border before forking off for the north again and on to more makeshift surfaces. But conditions improved as they went through Briançon, turned north-east for Susa and east for Monza. The toll had been heavy: the Hopkirk-Scott TR had hit a bank and the car's front wheels protested at their new alignment; however, the car carried on at unabated speed; Denis Scott with Ernie McMillen had mistaken the route and gone backwards down a providentially placed escape road in his standard works Ford Zephyr. The car received serious damage.

Burgess' modified Zephyr, with disc brakes and much tuned engine, went out with mechanical trouble—collapsed engine mountings. The Austin-Healey of Blockley and partner crashed just before Monza, and the American Robert Halmi damaged his Austin-Healey after trying to avoid the wreck of Cunane and Willmott's A.C. He and his partner also, in their two-seater, took the A.C. crew to receive attention, with the inevitable unhappy result of marks lost by their own entry.

Hopkirk and Scott's TR was first in to Monza, with enough time in hand to re-align the front wheels. Then, before seven o'clock in the morning, the first speed test began. The cars did their two warming-up laps behind the pace car, then the three laps counting for loss or gain of points, in mixed batches selected largely on order of arrival. Fast and slow cars were mixed up, but although the test was a race against time, most of the competitors carefully avoided racing against each other—they spread out behind the pace car so that each could do three laps as fast as they possibly could without being baulked by other *concurrents*.

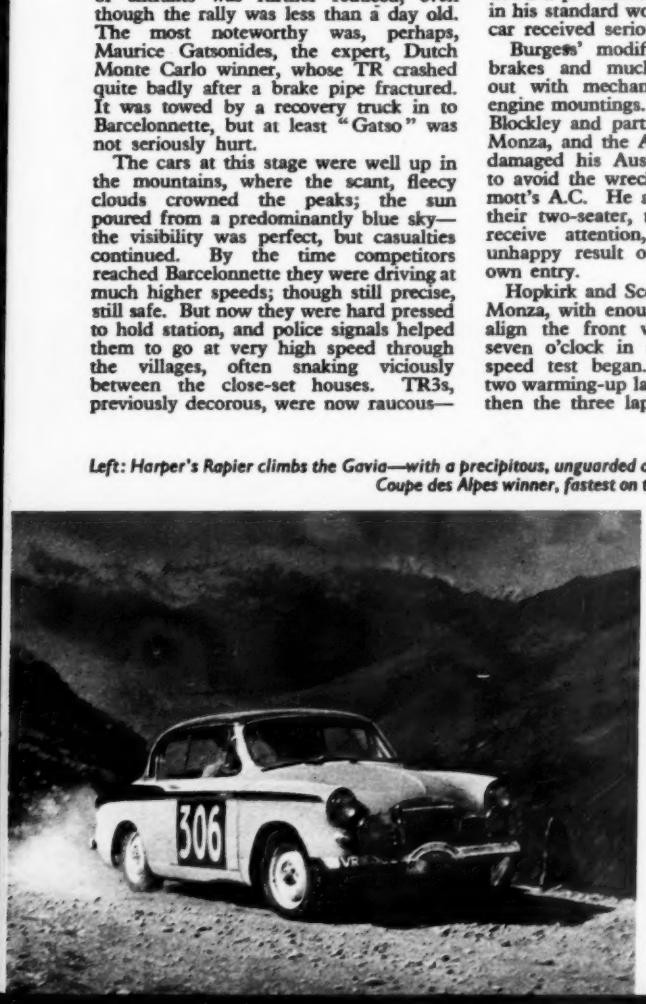
Dutch driver Tak was in the first group with his 300SL Mercedes, with the Ferrari—which was to spin with brake trouble—as main rival. Tak was easily fastest, and it proved afterwards that he had won the trophy for best time of all, even though he was to retire on the next stage.

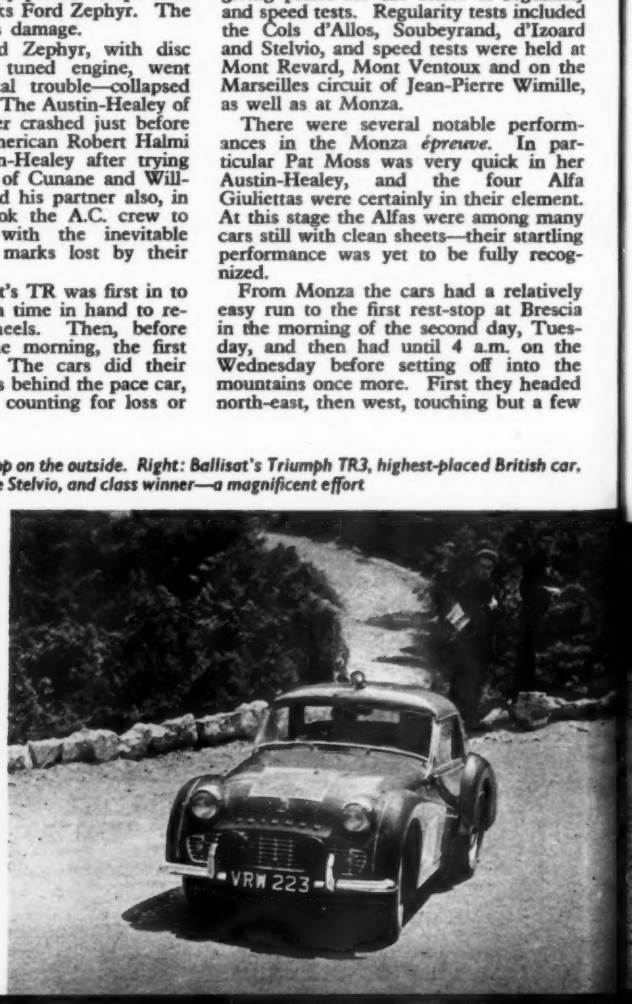
Trophies, incidentally, are awarded in quantity on the Alpine, various firms giving prizes for the series of regularity and speed tests. Regularity tests included the Cols d'Allos, Soubeyrand, d'Izoard and Stelvio, and speed tests were held at Mont Revard, Mont Ventoux and on the Marseilles circuit of Jean-Pierre Wimille, as well as at Monza.

There were several notable performances in the Monza *épreuve*. In particular Pat Moss was very quick in her Austin-Healey, and the four Alfa Giuliettas were certainly in their element. At this stage the Alfas were among many cars still with clean sheets—their startling performance was yet to be fully recognized.

From Monza the cars had a relatively easy run to the first rest-stop at Brescia in the morning of the second day, Tuesday, and then had until 4 a.m. on the Wednesday before setting off into the mountains once more. First they headed north-east, then west, touching but a few

Left: Harper's Rapier climbs the Gavia—with a precipitous, unguarded drop on the outside. Right: Ballisat's Triumph TR3, highest-placed British car, Coupe des Alpes winner, fastest on the Stelvio, and class winner—a magnificent effort





Left: Coupe des Dames winners, Pat Moss and Ann Wisdom pass through the Valernes-Ribiers section on Friday in their Austin-Healey 100-Six. Right: Paddy Hopkirk's Triumph TR3 climbed half the Stelvio on a burst tyre—against the clock!

kilometres of decent road before climbing again.

Just before the stretch of main road came the Passo di Groce Domini, a thoroughly dangerous pass which was to prove the undoing of the A.C. Ace hard-top of the brothers Burton. The car went over the edge, but fortunately not at a point where the drop was deep. The car landed upside down after the hard top had been torn off completely, and the crew had to dig a way under the doors to get out. One escaped with nothing more than a torn jersey, the other with a cut head and shock.

The toll was to continue, for within a few more miles another Monte Carlo winner, Ronnie Adams (Ford Zephyr) took a wrong turning. Unfortunately Jack Sears had already done the same thing in his Austin-Healey and was returning to the right road at full speed . . . . After the cars had been disentangled from each other and the local rockery, a few minutes' motoring brought Adams to the Ford tender car, where the exhaust system was repaired in what must have been record time.

Moments later Cuth Harrison appeared, going well, but with the modified Zephyr's disc brakes already giving trouble. His son, Edward, called for a new wheel bearing, and was told to press on so that it could be handed over later for possible use with less waste of time—Edward had one of the ever-diminishing number of "clean sheets."

The second rest halt was at Megève, near the famous French winter sports resort of Chamonix, reached by passes which included the Stelvio and Gavia. The former was used for a regularity test, and by the time each car completed the task, the dust from the gravel surface of this famous pass had insinuated itself into competitors' skins and hair, and into every cranny of most cars—even their luggage lockers.

During the test normal tourist bus and car traffic was running. The faces of down-going drivers were marked with anxiety, and competitors, too, were loud in demand for a closed road for this type of work.

At this stage many of the cars were the worse for wear. The 3.4 Jaguar of Ward and Cooper was considerably dented and without one of its rally plates; the Citroen ID19 of Capravesnes had hit a typical alpine bridge, lost a door and crumpled three of its four corners. Almost unbelievably this car was to become a finisher. An impressive entrant was the tuned Standard Ten of Corbishley, which was running beautifully and being driven to its limits.

At the top of the Stelvio skiers packed the street, taking time off from their July "winter sports" holiday above the snowline to watch the competitors. Incredibly, two of the Alfas had time to spare before the control at the top, while most other cars tore over at full bore.

Hopkirk burst the left rear tyre of his TR on the way up; the car seemed to slump crazily, but the Ulsterman kept going, to arrive with little but shreds of rubber on a ruined wheel. After a wheel change he restarted, descended, clocked in at the foot of this 9,042ft mountain—and on trying to restart again found that the engine had seized.

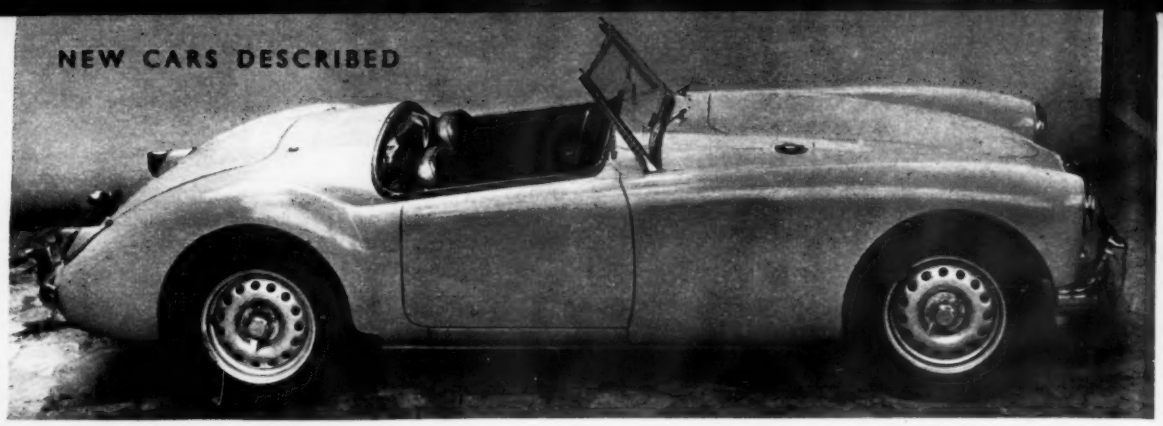
Key's Aston appeared with a pretence of a door held by a scrap of string and the navigator's left hand. The A.105 of Grounds and Shanley was also without a window and half a door, and another was crumpled. At the foot of Stelvio there were only 38 competitors running, and of these many were damaged, most had lost marks—and the frightening Gavia, with its precipitous drops lay ahead. There were more casualties, for only 33 cars reached the *parc fermée* at Megève, second rest halt.

In the rush of the Alpine there was time to take stock at Megève. All the Alfas were unmarked—in perfect trim and apparently leading the field; the Halmi TR had another dent at the front but was still going strong. Sprinzel's modified Sprite had a hole across the bonnet, and the Brookes-Wells Sprite had hit something solid. Adams' Zephyr was still motoring, as was the Bueb-Ray Rapier, in spite of damage. Although Sears' and Halmi's Austin-Healeys were damaged, the *marque* made an impressive sight in the *parc fermée*. Unscathed were those of Shepherd and Williamson, Mrs. Nancy Mitchell, Pat Moss with Ann Wisdom, and John Gott and Chris Tooley.

Megève had been reached from Stelvio and Gavia by a tortuous route which included the widely known Great St. Bernard pass, on which Italy and Switzerland join, close to France. The going was relatively easy, but the Citroen DS of M. J.-M. Catalin, director of the rally, left the road. M. Catalin escaped with a multiple leg fracture, but one of the secretaries who was travelling with him was killed. In the rally itself there were no serious injuries, which reflects the high standard of driving skill in view of the

(*Continued on page 94*)

Left: Ted Harrison's Ford Zephyr—which finished fifth overall, and won its class—passes a horde of schoolchildren near La Morte. Right: The A.C. Aceca driven by Cyril Pilgrim and A.A. Wright churns up the dust near Plan D'Aups on the Monday



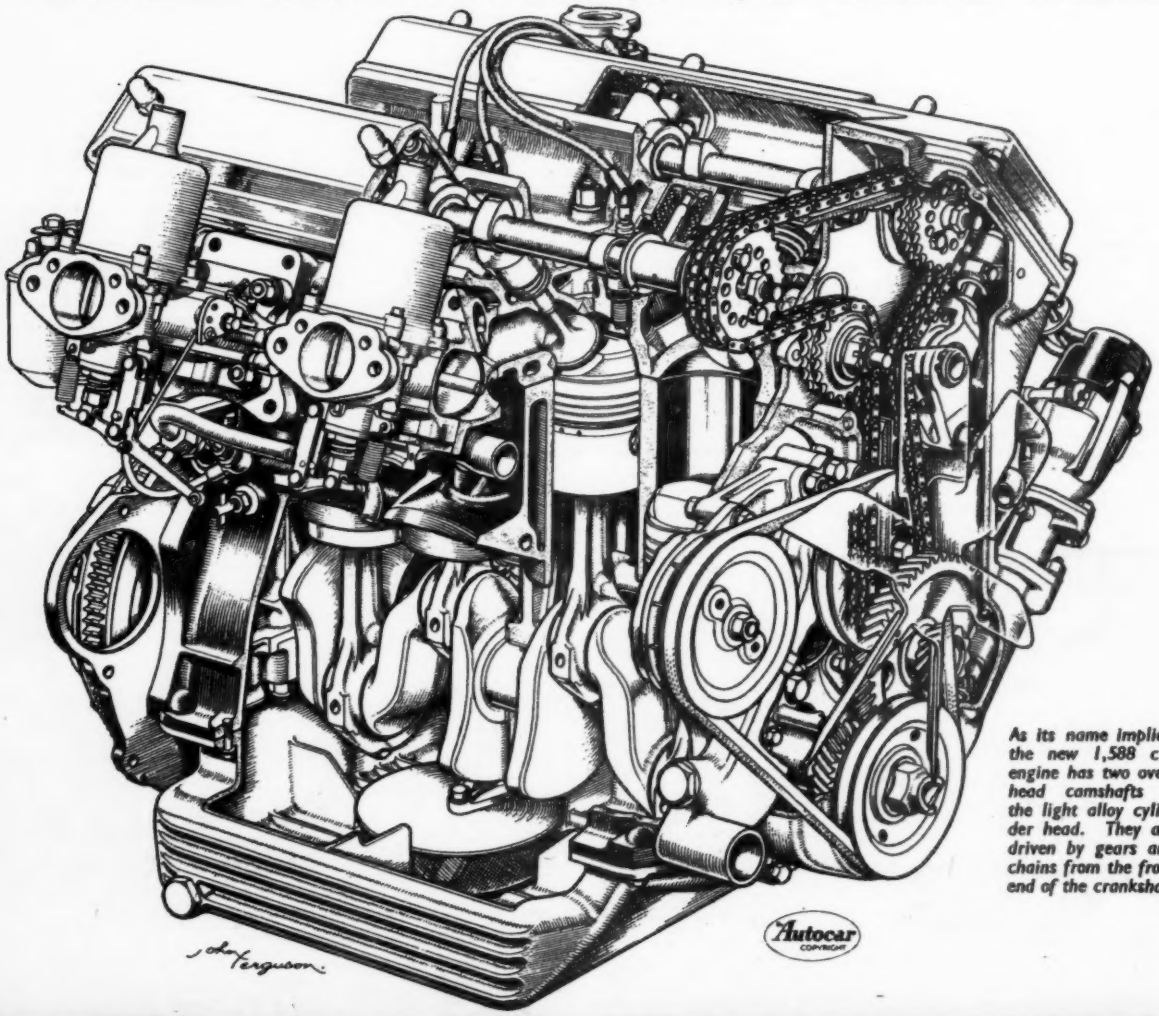
TWIN CAMS for MGA

DISC BRAKES, CENTRE LOCK DISC WHEELS STANDARDIZED

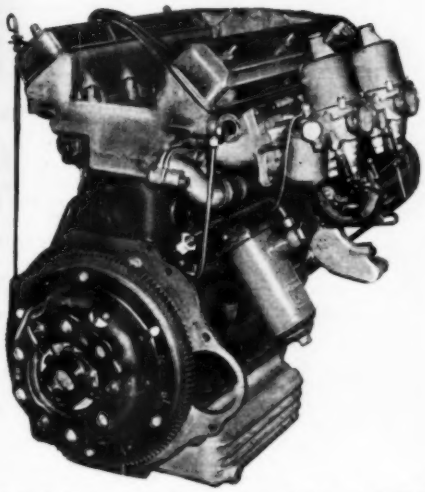
TWIN camshafts, apart from increasing the top end performance of an engine, have a known sales appeal. The M.G. Car Company, of Abingdon, raced a prototype B series engine so equipped in the T.T. race at Dundrod in 1955, followed a year later by the fitting of the same experimental engine in the famous car EX 179 which broke many International Class F world records at Utah, and finally last year fitted it in the new streamlined record-breaker EX 181 with a supercharger. Enthusiasts for the marque took these as portents of a future production car.

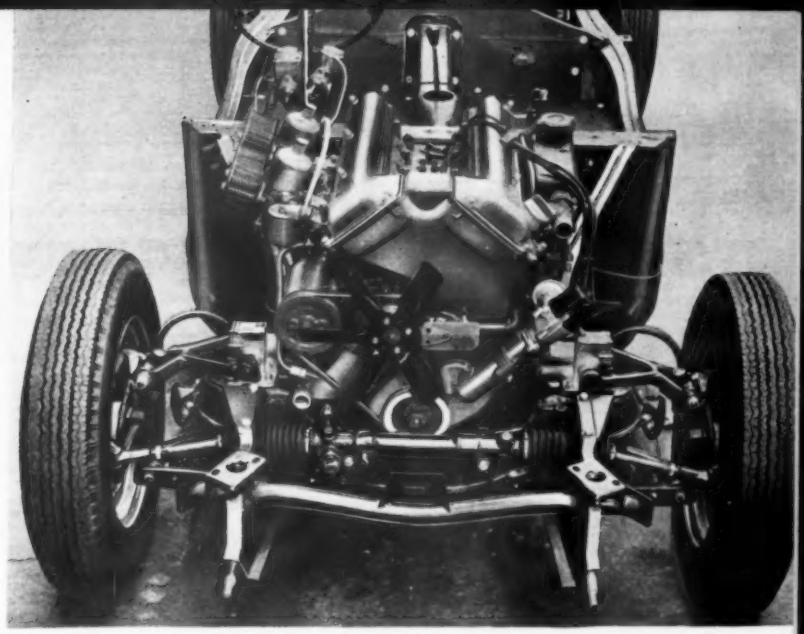
This is now confirmed by an announcement from M.G. that a twin camshaft model is added to the MGA range. It will not replace the current push-rod MGA models, which will continue unchanged. The two styles of body for the current and new twin-cam models—open and coupé—are identical. The extra cost on basic price is £180, so that inclusive of purchase tax the extra price in the United Kingdom is £270. In addition to the new engine, Dunlop disc brakes and centre-lock disc wheels are fitted all round as standard equipment. It must be emphasized that because of the different installation, it is impossible to convert a standard MGA to the specification of the Twin Cam model, and that disc brakes will not be made available for the basic MGA.

The chassis of the new car is identical with that of the push-rod model, except for minor changes dictated by the installation. For instance, the rack-and-pinion steering gear is approximately 1in farther forward to clear the front of the power unit, and slightly longer and stiffened



As its name implies, the new 1,588 c.c. engine has two overhead camshafts in the light alloy cylinder head. They are driven by gears and chains from the front end of the crankshaft





Left: Induction side of the engine, showing the full-flow filter, and water connection from the pump direct into the rear of the cylinder head. Right: Engine installed in the chassis. The box-section frame is well braced to minimise torsional deflections. Compared with the push-rod model, tyre sections have been increased from 5.60 to 5.90—both use 15in wheels

steering arms are used. A modification in the front wheel hubs arising from the adoption of disc brakes and disc wheels is the substitution of taper roller bearings for ball races, and the front track is fractionally wider. Steering swivel pins have been slightly increased in the length between pivot centres, and the rate of the front suspension springs increased to allow for the additional weight of the twin-camshaft engine. Other basic dimensions are as for the current MGA push-rod model.

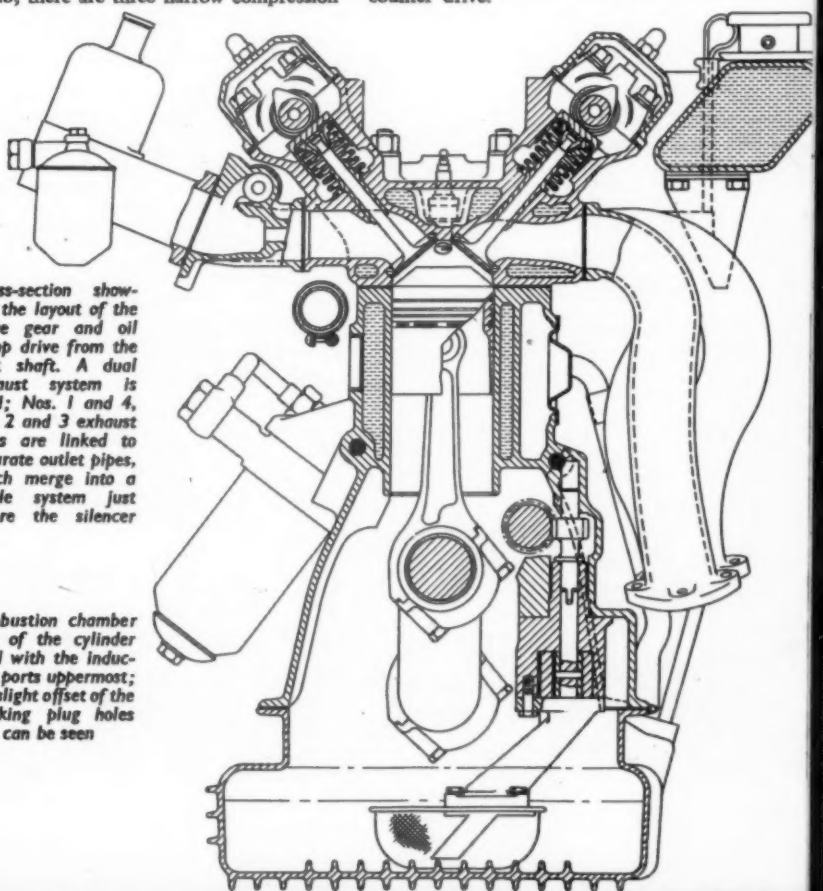
As many M.G. owners compete in sporting events, the capacity of the new engine has been increased to take full advantage of the classifications laid down in appendix J of the International Sporting Code. Thus the engine displacement, as compared with the push-rod model, has been raised from 1,489 c.c. to 1,588 c.c., by enlarging the bore from 73.02mm to 75.4mm, retaining the same stroke of 88.9mm. This increase in bore size has entailed sacrifice of the water space between Nos. 1 and 2 and Nos. 3 and 4 cylinders.

For ease of production, certain parameters were placed on the design of the cylinder block which, although outwardly resembling the standard B series unit, is made from entirely new pattern equipment. Location of main faces from the crankshaft centre line, and main bearing bores are identical. Thus the basic machining can be undertaken on the transfer-matic machines of the production line at the Austin works at Longbridge (with consequent reduction in costs), and the units are then despatched for finishing at the Morris engine works at Coventry where, in fact, the design and development was undertaken.

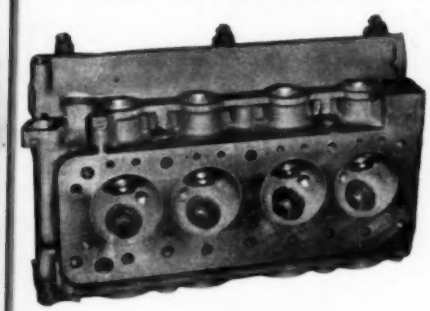
Main- and big-end bearing sizes are unchanged—the mains being 2in dia by 1¾in wide, and the big-ends 1⅞in dia by 1¼in wide. To accommodate the higher loads involved, all bearings are copper-lead, indium-infused. A completely new design of con. rod has been introduced, but the big-end bearing is still offset from the centre line of the piston by 0.109in.

To enable the rod to pass through the cylinder bore, the big-end is split at an angle of 45 deg, with the cap positively located on the rod by a saddle joint, and retained by set bolts locked by tab washers. The fully floating gudgeon pin is retained by circlips in the piston, the crown of which is domed to provide the 9.9 to 1 compression ratio; there are three narrow compression rings (the top one chromium plated) and a slotted oil control ring, all above the gudgeon pin.

Drive to the camshafts is in two stages, the first being by gears and the second by a duplex roller chain. Replacing the camshaft of the push-rod engine is a jack shaft in the same position, driven at half engine speed by single helical, case-hardened and shaved steel gears from the front end of the crankshaft. On the front end of this jack shaft is a spiral gear drive for the distributor, at its mid-point another set of gears for the vertically mounted Holburn Eaton type oil pump, and at the rear a third set for the rev counter drive.

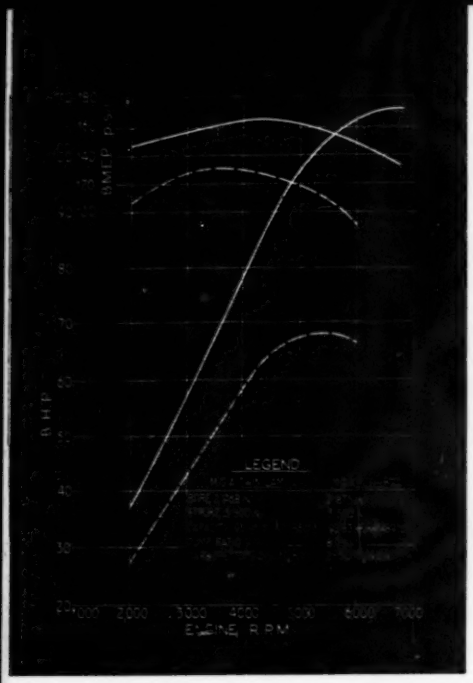


Cross-section showing the layout of the valve gear and oil pump drive from the jack shaft. A dual exhaust system is used; Nos. 1 and 4, and 2 and 3 exhaust ports are linked to separate outlet pipes, which merge into a single system just before the silencer



Combustion chamber side of the cylinder head with the induction ports uppermost; the slight offset of the sparking plug holes can be seen

PRICES: Open two-seater, basic price in U.K. £843, plus purchase tax £422 17s, total £1,265 17s; coupé, basic price in U.K. £904, plus purchase tax £453 7s, total £1,357 7s.



A comparison of the power curves for the 1,489 c.c. push-rod engine and the new, 1,588 c.c. twin-cam unit, emphasizing the improved breathing which is permitted by the twin camshaft layout

TWIN CAM MGA

In tandem with the jack shaft gear is the primary sprocket of the chain drive. Running in an anti-clockwise direction, it connects first of all with the inlet camshaft, the chain passing over a fixed idler sprocket to form a right-angle run. Next in the sequence is the exhaust camshaft sprocket, and between this and the return run to the jack shaft is a spring-loaded jockey sprocket, adjustable through the top of the front timing cover. There are two damping pads, one between the jack shaft and the fixed idler sprocket, and the other between the two camshaft sprockets —both on the tight side of the chain.

A continuous oil feed is arranged off the main system for the gears, a jet spraying into the nip of the gears on the ingoing side. This oil supply is also piped to the spindle on which the jockey sprocket rocks, all other feeds to the chains being by the over-spill from the camshaft chests.

On the front face of the cylinder block is a planished steel plate, and to this is bolted and dowelled the one-piece timing cover; the cylinder head can be removed without disturbing this plate.

The valve covers, each held on by five nuts and having a common joint face with the head and front timing cover, are first removed, to expose the camshaft and chain drive. Each camshaft sprocket is held on by two fitting bolts and located on a spigot; these bolts are removed. In addition, there is a central locating bolt; unscrewing this withdraws the sprocket and, at the same time, the front end of the central bolt enters a threaded keep plate attached to the timing cover, to prevent the sprockets and chains falling into the timing chest.

Each sprocket has 25 teeth, and there are 12 holes for the fitting bolts, so that by a suitable combination of tooth-and-hole, 2½ crankshaft degrees, i.e., 1¼ deg on the camshaft, of vernier timing can be obtained. An oil joint between the cylinder head and timing chest is formed by a half-round synthetic rubber ring which seats in a corresponding cradle in the timing cover plate and is compressed when the cylinder head is tightened.

What must now be regarded as the classical design for an overhead camshaft is utilized. This consists of inverted, bucket-type tappets, valve clearances being set by a selected range of case-hardened and ground biscuits interposed between the tappet and the end of the valve stem, and retained radially by the valve collar. Head material is aluminium alloy, with seat inserts for each of the valves, which are disposed equally on either side of the cylinder centre line at an included angle of 80 deg. The tappets, which are manufactured in Brimol cast iron, run directly in the aluminium casting; the shouldered valve guides also are of cast iron. The valve seats are of austenitic cast iron having a co-efficient of expansion very close to that of aluminium; they are cast in position with a 14 deg inclusive back taper to hold them securely in position, and formed with a rough turn finish on the outside diameter further to improve adhesion.

Each camshaft has three bearings, with split shells lined in white metal, and pressure-fed from the main oil gallery. The 14mm sparking plugs are placed vertically, without inserts, and are situated slightly forward of the transverse centre line but well in the path of the inlet gases.

Water from the belt-driven centrifugal pump is fed directly into the cylinder head at the rear on the inlet side, and flows forward and across, with the outlet at the front on the exhaust side, to a separately mounted header tank, before passing to the radiator. Cooling of the cylinder jacket bores is by thermosyphon action. Carburation is by two semi-downdraught 1¾in dia S.U. carburettors, and no manifold heating is provided.

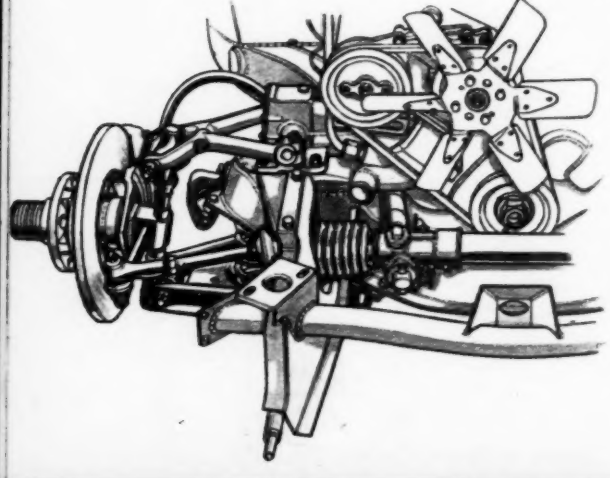
For an extra weight penalty of approximately 50 lb the twin-camshaft engine produces 58 per cent more power, and the engine speed at which it peaks has been raised from 5,500 to 6,700 r.p.m. Similarly, the maximum torque has been increased by 35 per cent, and the point in the engine range at which it occurs extended from 3,500 to 4,500 r.p.m. Examination of the b.m.e.p. curves on the left, which are directly proportional to the torque, shows that filling at the bottom end of the speed range has been maintained, and that the fall-off up to maximum speed is very moderate, indicating good filling throughout the range.

To match this increased engine performance, Dunlop disc brakes are fitted all round. In the M.G. installation no servo assistance is provided; by using discs of large diameter, pedal loads have been kept reasonable, as the accompanying road test reveals. Because the disc brakes have no self-servo action as in a normal drum and shoe installation, pedal ratios have been increased. With many drum type brakes this could result in a lot of free pedal travel with frequent adjustment; but as an inherent feature of the Dunlop discs is automatic maintenance of a constant running clearance, this problem is obviated. Additionally, discs do not expand away from the friction pads at temperature as do drum brakes, so that a fairly consistent amount of free pedal travel should be maintained. The centrally mounted, fly-off hand brake is linked to the rear wheels, which have a separate set of pads for the mechanical hook-up.

Among the extra items available are de luxe seats, a shallow competition windscreen, windscreen washer, a wood-rimmed steering wheel, adjustable steering column, an oil cooler for competition work, radiator blind, tonneau cover, twin horns, heater, fog lamps and radio.

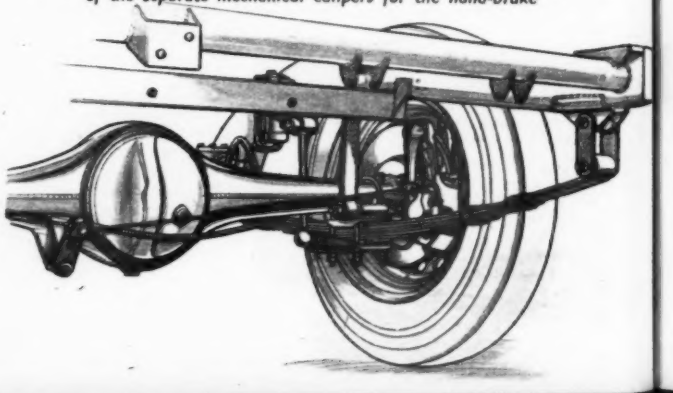
Experience of several push-rod MGA models has convinced us that the road-holding and steering is of a very high order. Much of this arises from the use of a very stiff—albeit rather heavy —box section frame, well braced at the scuttle to minimize deflection against suspension loads. These desirable features are retained in the new MGA Twin Cam. The price to be paid for the extra performance and increased braking is not unreasonable, and this latest product from Abingdon must rank among the world's outstanding sports cars.

SPECIFICATION ON PAGE 90



Left: Front suspension layout showing the Dunlop disc brakes and the forward-mounted rack and pinion steering. The dynamo, and the fan on the end of the water pump shaft run at engine speed

Rear suspension and disc brakes, showing the cable and conduit operation of the separate mechanical calipers for the hand-brake



The radiator grille bears the well-known M.G. octagonal motif. On each side of the bonnet are vents to allow hot air to escape from the engine compartment. Direction indicators are combined with the side lights

Autocar ROAD TESTS 1692

M.G. Twin Cam MGA

OPEN TWO-SEATER

BY producing a high-performance model to partner the successful MGA two-seater, the M.G. Car Company, Ltd., has filled a gap which has been evident to overseas and competition-minded motorists; the new 1,588 c.c. twin overhead camshaft engine will enable the car to compete on equal terms in the 1,300-1,600 c.c. class with Continental-built cars. As described in preceding pages, this engine is a development of the special power unit used in the record-breaking M.G. EX 181.

The new model also has Dunlop 10¾in disc brakes, centre-lock steel wheels and Road Speed tyres, which are not fitted to the standard MGA. The road test car was an open model equipped with hood and side screens and all optionally extra equipment. A coupé version of the car is available.

Powered by the twin carburettor version of the 1½-litre B series engine, the standard MGA coupé is capable of slightly more than 100 m.p.h.; the new 1,600 c.c. unit gives the open car, with hood and side curtains in position, a maximum of 114 m.p.h. It is faster than the 1½-litre car by 1.7sec to 60 m.p.h., and by 15sec to 90 m.p.h.

The engine starts easily and quickly reaches working temperature. It revs freely, and the limit marking on the tachometer is 7,000 r.p.m.; it was taken up to this limit repeatedly during the test.

Engine vibration was noticed at 2,500 and 5,500 r.p.m.; at maximum speed in top gear the tachometer reading was 6,500 r.p.m., and this was held for approximately 5 miles on a level stretch of *autoroute*.

Power builds up noticeably after the engine tops 3,500 r.p.m.; by the time 4,000 r.p.m. is reached it really takes hold and the little car begins to show its potential performance. In first gear it gets very quickly to 30 m.p.h., and a fast change to second gear is needed to avoid exceeding the rev. limit. The comfortable minimum speed in top is 18-20 m.p.h., and in traffic, second and third gears are most used. In open road cruising, 80-90 m.p.h. can be held indefinitely, with plenty in hand for use when required. The car was quite happy at 100 m.p.h. for long stretches on Continental roads, although to maintain high engine speeds has a marked effect on the fuel consumption, of course, and above 90 m.p.h. the driver has the feeling that the engine is working much harder.

There is a constant, rather obtrusive background of mechanical noise; most of this can be traced to the valve gear, particularly the tappets, which have a recommended clearance of 0.018in, but there is also a "ring" associated with the first stage of the timing gears. Nor can it be said that the engine is smooth or silky. Exhaust-wise, the car is not objectionable, and it can be driven through city traffic without attracting undue attention. This car had a loose silencer baffle. Carburettor intake noise is not noticeable, although only small flame-trap type air cleaners are fitted.

From the performance and maintenance angles, the MGA has an enthusiast's engine. Many of the ancillary units are not easy to reach, as the underbonnet space is filled by the engine itself. The distributor is located below a camshaft housing (it became covered in oil during the test), and the coil is tucked away under the heater trunking. The oil level dipstick would be easier to replace if its containing tube were a little longer. An oil cooler, which is an optional extra, was mounted in front of the radiator, but no oil temperature gauge was supplied.

All maximum speed and acceleration tests were carried

When the side curtains alone are used, the crew can enjoy fresh air motoring with some measure of protection from draughts. The Twin Cam insignia appears beneath the motif on the tail panel

M.G. Twin Cam MGA . . . .

The hood and side curtains are a snug fit and follow closely the contours of the body. There is no exterior door handle. Three large windows at the back of the hood are made of flexible Vybak. Bumper overriders are standard

out with 100 octane petrol. With this, and Belgian premium petrol (89 research octane rating), the engine tended to "run on" after being switched off. It also used a considerable amount of oil; five pints were added to the sump during one journey of 800 miles, and an overall oil consumption figure of 1,020 m.p.g. was recorded—approximately one quart of oil each time the petrol tank (capacity 10 gallons) was refilled.

Once accustomed to the controls, an experienced driver can get off the mark with very little wheel spin, but it was felt that more suitable gear box ratios would give an even more sparkling getaway, without losing the benefit of easy fast cruising—there is a very noticeable interval between first and second, and between second and third. An owner using the car for circuit racing would, no doubt, prefer a gear box with closer ratios. A 4.55 to 1 axle ratio can be fitted in place of the standard 4.3 to 1 ratio at an extra cost of £10 2s 6d.

Apart from occasional difficulty in selecting first gear when the car is stationary, the gear box is generally pleasant to use. The short, remote control lever has precise movements between the ratios, and very fast changes can be made. One notices a slight difficulty—not uncommon in B-series gear boxes—in getting through the gate transversely, particularly when the gear box is hot. This sometimes makes difficult the change from third into second, and there is a risk that the lever may overshoot into the reverse quadrant. The top of the lever is close to the steering wheel when the latter is set near the facia; it is also well placed in relation to the driving seat. There was no vibration from the transmission, and the axle was silent.

Free from slip during full-bore gear changes, the clutch transmitted the engine power without judder under all conditions. Some adjustment was found necessary to take up pedal movement, but once attended to the need did not recur. Positioning of the pedals is good, although to clear the clutch pedal, the left foot has to be placed beneath it rather than to the left. The accelerator, which is connected to the throttle by a cable, works smoothly, and delicate, progressive control can be achieved.

Among the most delightful features of the MGA are its road-holding and cornering. The manufacturers' well-known motto—Safety Fast—is particularly pertinent to this new model. Changes in road surface have little effect on the manner in which the car sits firmly on the road, and its behaviour on a streaming wet road is equally good, although the tail will swing slightly if the throttle is opened suddenly when cornering. Power can be used judiciously to help the car round a corner, in fact progress on a winding road is all the better if this technique is applied.

There is strong self-centring of the steering, and there is no lost motion to impair its accuracy; from lock to lock requires only 2¾ turns of the wheel, and although the turning circle is greater by 4ft 6in than that of the 1½-litre-engined car, the Twin Cam model can be manœuvred easily in narrow streets.

A slight heaviness in the steering was noticed with the tyres inflated to the normal recommended 18 lb front and 20 lb rear; when pressures were raised by 4 lb sq in, this heaviness disappeared and the ride was not uncomfortable.

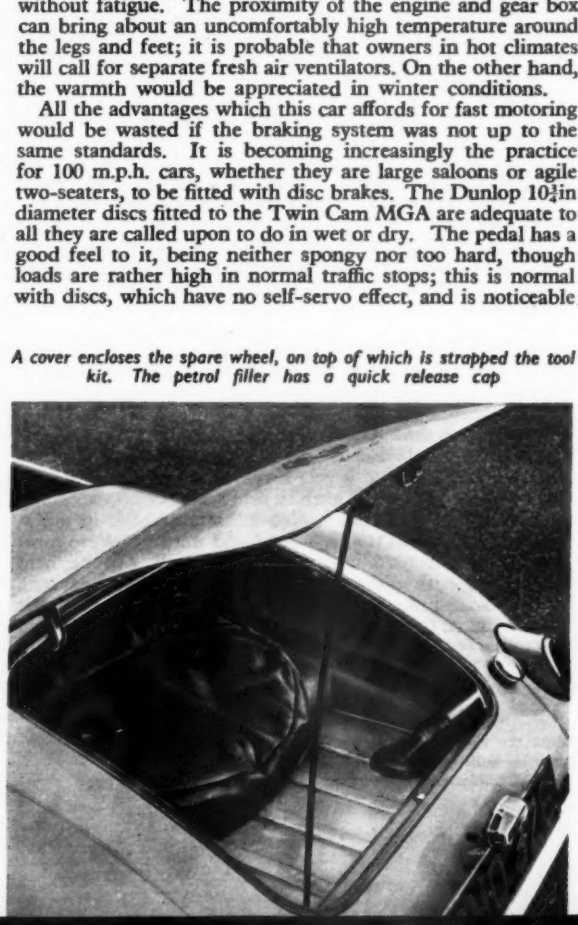
With full load, or with the driver only in the car, there is a satisfactory firmness about the suspension, which reaches an excellent compromise in a car which may be called upon to take the owner to work during the week, and yet be driven in races at the weekend. Stability is first class and there is no heeling-over on corners, although brisk progress is marked by excessive tyre squeal; the latest pattern Road Speed tyres were not fitted to the test car.

The driving position is well suited to most drivers, but a person of small stature would be happier with a higher seat cushion. The steering wheel can be set close to the facia, by a lock-nut and bolt fitting; in this position of adjustment the driver has fingertip control of the horn button and indicator switch. The thin-rimmed wheel is set at an ideal angle for control, being almost vertical; it does not obscure the instruments.

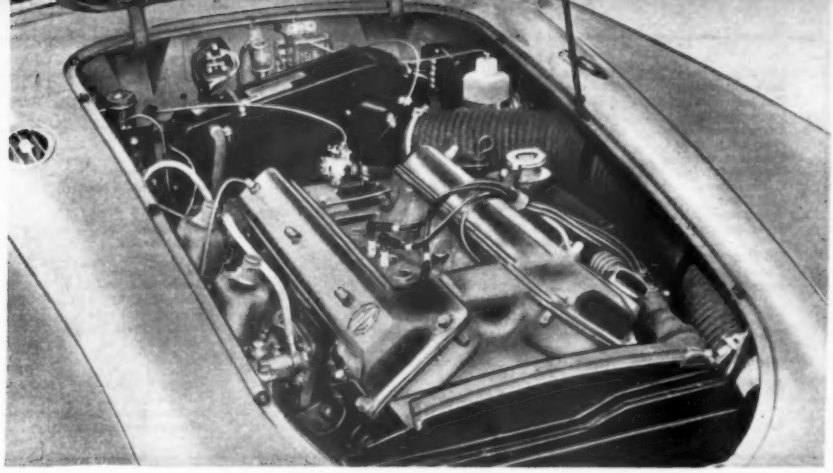
Fitted to the test car were the competition-type seats, which have a padded roll round the edge of the back rest, and long cushion; they proved most comfortable and provided firm support at a good angle. Driver and passenger are well held when cornering fast, and long distances can be covered without fatigue. The proximity of the engine and gear box can bring about an uncomfortably high temperature around the legs and feet; it is probable that owners in hot climates will call for separate fresh air ventilators. On the other hand, the warmth would be appreciated in winter conditions.

All the advantages which this car affords for fast motoring would be wasted if the braking system was not up to the same standards. It is becoming increasingly the practice for 100 m.p.h. cars, whether they are large saloons or agile two-seaters, to be fitted with disc brakes. The Dunlop 10¾in diameter discs fitted to the Twin Cam MGA are adequate to all they are called upon to do in wet or dry. The pedal has a good feel to it, being neither spongy nor too hard, though loads are rather high in normal traffic stops; this is normal with discs, which have no self-servo effect, and is noticeable

A cover encloses the spare wheel, on top of which is strapped the tool kit. The petrol filler has a quick release cap



M.G. Twin Cam MGA . . . .



The polished aluminium covers of the camshaft housings dominate the under-bonnet view

when there is no external servo assistance, as in the case of the MGA. Maximum braking brought the car to a standstill all square, and the brakes could be applied hard when the car was being driven fast on wet roads. There was no noticeable increase in pedal travel after 800 miles of fast driving. The front discs did show signs of scoring, which has not been noticed on other cars.

The parking brake is controlled by a fly-off-pattern lever, in which the button is pressed to lock the brake on. The lever is placed between the transmission cover and the driving seat, and the hand falls readily on it.

At night reasonable use can be made of the car's performance, although more powerful head lamps would be appreciated for speeds close to 100 m.p.h.; the dipped beam did not inconvenience oncoming traffic. The Twin Cam MGA is one of the cars which really do require a hand dipper switch. When driving on the open road at night, one needs two left feet to operate the clutch and the foot dipper, for the driver always seems to need to change gear and alter the light setting at the same moment. The positioning of the pedal and switch are such that the changeover cannot be made on the instant.

Facia instruments are well lit, and the switch is fitted with a rheostat. There is a small map light, with a separate switch on the left side of the facia. Self-parking wipers are fitted, and although they are powerful and silent, they are up against an unusual handicap—in heavy rain, water is blown off the bonnet on to the screen and the wipers have difficulty in clearing it. An owner could perhaps prevent this by fitting a shallow Perspex deflector across the bonnet to deflect the air stream up and over the screen.

With the hood and side curtains erected, the car proved weatherproof except at speeds over 90 m.p.h., when wind pressure tended to lift the hood above the middle of the windscreen; rain found its way in there, and also through the scuttle on to the passenger's legs. Although there were gaps between the windscreen frame and the side screens, rain did not penetrate here. The hood is comparatively simple to erect and can be folded away neatly behind the seat backrests. A plastic bag, secured to the bodywork behind the seats, provided stowage for the side curtains.

With the hood and side curtains erected, a tall driver has no difficulty in getting into or out of the car, and there is ample headroom. In this condition, the occupants find the interior rather warm, and it was not possible to obtain a flow of cool air through the vent above the gear box cover. A heater—part of the extra equipment—proved amply efficient in the moderate temperatures encountered during the test.

Accommodation for maps and small articles is provided by a deep pocket in each door, but as the doors cannot be locked, it is not advisable to stow valuables in these pockets if the car is left unattended. Only the Twin Cam models and the 1½-litre coupé are supplied with a leather-covered facia. A large proportion of the luggage compartment is occupied by the spare wheel and tool kit, and it is not easy to find room for a large suitcase, but a number of small bags and boxes can be stowed away. If coats and soft travelling bags are fitted in carefully, more can be carried than at first appears likely.

The tool kit includes a starting handle and, surprisingly, an old-fashioned, screw-type lifting jack. Two 6-volt batteries are located just forward of the rear axle; to service them the spare wheel and a panel in the floor behind the seats must be removed. The high-pressure electric fuel pump is close to the battery on the right side of the frame. Nine lubrication points require grease gun attention every 1,000 miles.

In the road test of the 1½-litre MGA coupé it was stated in summary that the car was capable of holding its own against more powerful vehicles; this applies even more markedly to the 1,600 c.c. Twin Cam model. The extra performance is matched by the road-holding, steering and brakes, and this car maintains the M.G. tradition of good looks coupled with a very fine performance.

Left: Competition seats, an optional extra, are contoured to give extra support in cornering, and under the thighs. Right: This is a functional facia, with neat, easily read dials. The main switches come quickly to hand. The steering wheel is shown in its nearest adjustment to the facia. The plated support on the left of the windscreen forms a useful grab handle for the passenger

SPECIFICATION

ENGINE

No. of cylinders	...	4 in line
Bore and stroke	...	75.4 x 88.9 mm (2.97 x 3.5in)
Displacement	...	1.588 c.c. (96.91 cu in)
Valve position	...	Twin O.H.C. Hemispherical combustion chamber
Compression ratio	...	9.9 to 1
Max. b.h.p. (nett)	...	108 at 6,700 r.p.m.
Max. b.m.e.p. (nett)	...	163 lb sq in at 4,500 r.p.m.
Max. torque (nett)	...	104 lb ft at 4,500 r.p.m.
Carburettors	...	Twin 1¾in dia S.U. type H.6
Fuel pump	...	S.U. high pressure
Tank capacity	...	10 Imp. gallons (37.8 litres)
Sump capacity	...	12 pints max. (5.7 litres)
		7½ pints min. (3.6 litres)
Oil filter	...	Full flow
Cooling system	...	Pump, fan and thermostat
Battery	...	12 volt, 51 ampère hour

TRANSMISSION

Clutch	...	8 and 8. 8in dia single dry plate
Gear box	...	4 speeds and reverse, synchromesh on top, 3rd and 2nd. Central lever
Overall ratios	...	Top 4.30; 3rd 5.91; 2nd 9.52; 1st 15.65; reverse 20.47 to 1.
Final drive	...	Hypoid bevel, 4.3 to 1.

CHASSIS

Brakes	...	Dunlop disc. Hydraulic operation. Mechanical calipers for hand brake on rear wheels
Disc dia, pad width	...	10¾in outside dia (2½ x 1¾in pads)
Suspension: front	...	Independent, coil springs and wishbones
rear	...	Live axle, half-elliptic leaf springs
Dampers: front	...	Armstrong in unit with wishbone pivots
rear	...	Armstrong lever arm, chassis-mounted
Wheels	...	Dunlop centre-lock steel disc type
Tyre size	...	5.90—15in Dunlop R.S.4
Steering	...	Rack and pinion
Steering wheel	...	16½in dia four spoke
Turns, lock to lock	...	2½

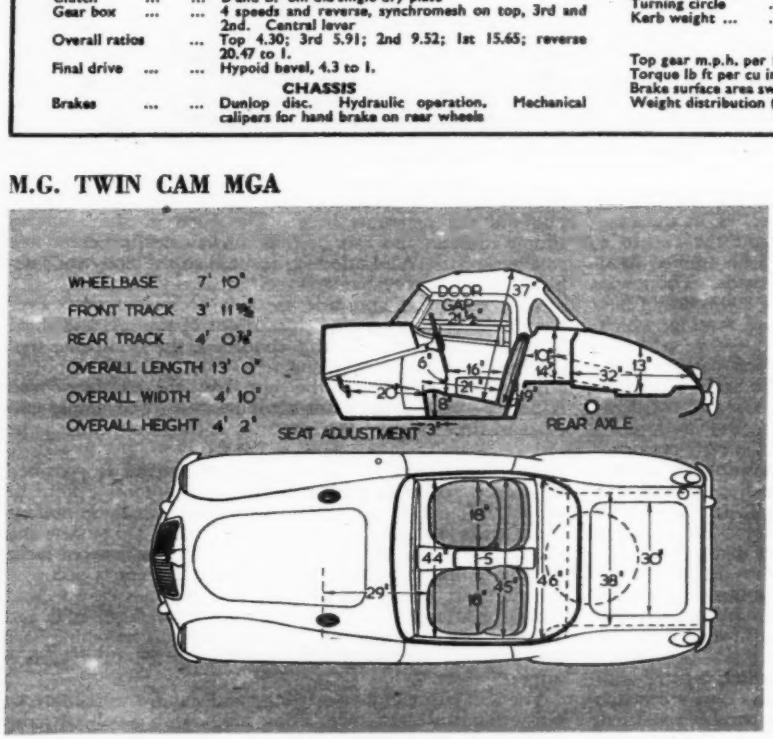
DIMENSIONS

Wheelbase	...	7ft 10in (239 cm)
Track: front	...	3ft 11.9in (121 cm)
rear	...	4ft 0.87in (124 cm)
Overall length	...	13ft (396 cm)
Overall width	...	4ft 10in (147 cm)
Overall height	...	4ft 2in (127 cm)
Ground clearance	...	6in (15 cm)
Turning circle	...	31ft 4in (9.55 m)
Kerb weight	...	2,156 lb (19½ cwt) (977 kg)

PERFORMANCE DATA

Top gear m.p.h. per 1,000 r.p.m.	...	17.3
Torque lb ft per cu in engine capacity		1.083
Brake surface area swept by linings	...	494.8 sq in
Weight distribution (dry)	... ...	F, 54.6 per cent R, 45.4 per cent

M.G. TWIN CAM MGA



Scale ¼in to 1ft. Driving seat in central position. Cushions uncompressed

PERFORMANCE

ACCELERATION:

Speed Range, Gear Ratios and Time in sec.

M.P.H.	4.30 to 1	5.91 to 1	9.52 to 1	15.65 to 1
10—30	—	—	4.5	3.3
20—40	11.0	7.1	4.5	—
30—50	10.2	7.4	4.9	—
40—60	10.5	7.5	—	—
50—70	11.7	7.6	—	—
60—80	11.7	8.9	—	—
70—90	13.6	—	—	—
80—100	18.7	—	—	—

From rest through gears to:

M.P.H.	sec.
30	4.3
40	6.9
50	9.4
60	13.3
70	17.3
80	22.5
90	30.0
100	41.1

Standing quarter mile, 18.6 sec.

MAXIMUM SPEEDS ON GEARS:

Gear		M.P.H.	K.P.H.
Top	(mean)	113.5	182.7
	(best)	114.0	183.5
3rd		86	138
2nd		53	85
1st		32	51

TRACTIVE EFFORT:

	Pull (lb per ton)	Equivalent Gradient
Top	232	1 in 9.6
Third	315	1 in 7.0
Second	486	1 in 4.5

BRAKES (at 30 m.p.h. in neutral)

Pedal load in lb	Retardation	Equivalent stopping distance in ft
25	0.45g	67.2
50	0.62g	48.7
75	0.81g	37.4
90	0.92g	32.8

FUEL CONSUMPTION:

M.P.G. at steady speeds

M.P.H.	Direct Top
30	42.4
40	40.0
50	35.6
60	31.7
70	27.4
80	23.6
90	20.2
100	18.1

Overall fuel consumption for 1,117 miles, 21.8 m.p.g. (12.9 litres per 100 km).

Approximate normal range 18-30 m.p.g. (15.7-9.4 litres per 100 km).

Fuel: Super premium.

TEST CONDITIONS: Weather: overcast, raining. Slight breeze. Acceleration and braking tests on dry surface.

Air temperature, 55–65 deg F.

Acceleration figures are the means of several runs in opposite directions.

Tractive effort obtained by Tapley meter.

SPEEDOMETER CORRECTION: M.P.H.

Car speedometer:	10	20	30	40	50	60	70	80	90	100	110	114
True speed:	11	20	28.5	38.5	48	58	69	80	91	101	112	114

DATA

PRICE (basic), with two-seater body, £843.
British purchase tax, £422 17s.
Total (in Great Britain), £1,265 17s.
Extras:

	£	s	d
Screen washer	3	0	0
Heater	18	7	6
Adjustable steering column	3	0	0
Oil cooler	13	10	0
Competition seats	9	18	9
Twin horns	2	1	3

ENGINE: Capacity, 1,588 c.c. (96.91 cu in).
Number of cylinders, 4.
Bore and stroke, 75.4 × 88.9 mm (2.97 × 3.5in).
Valve gear, twin overhead camshafts.
Compression ratio, 9.9 to 1.
B.H.P. 108 (nett) at 6,700 r.p.m. (B.H.P. per ton laden 96.5).
Torque, 104 lb ft at 4,500 r.p.m.
M.P.H. per 1,000 r.p.m. in top gear, 17.3

WEIGHT: (with 5 gals. fuel), 19½ cwt (2,156 lb).
Distribution (per cent): F, 53.9; R, 46.1.
Laden as tested, 22½ cwt (2,506 lb).
Lb per c.c. (laden), 1.6.

BRAKES: Type, Dunlop disc.
Method of operation, hydraulic.
Disc diameter: F, 10¾in; R, 10¾in.
Lining swept area: F, 247.4 sq in; R, 247.4 sq in.

TYRES: 5.90—15in.
Pressures (lb sq in); F, 18; R, 20 (normal). F, 22; R, 24 (fast driving).

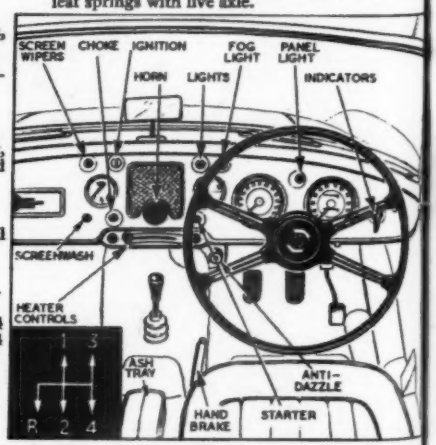
TANK CAPACITY: 10 Imperial gallons.
Oil sump, 12 pints.
Cooling system, 13½ pints (plus 1 pint if heater fitted).

STEERING: Turning circle, 32ft 6in.
Between kerbs, 31ft 4in.
Between walls, 33ft 5in.
Turns of steering wheel from lock to lock, 2½.

DIMENSIONS: Wheelbase, 7ft 10in.
Track: F, 3ft 11⅞in; R, 4ft 0⅞in.
Length (overall), 13ft.
Height, 4ft 2in.
Width, 4ft 10in.
Ground clearance, 6in.
Frontal area, 13.8 sq ft (approximately).

ELECTRICAL SYSTEM: 12-volt; 51 ampère-hour battery.
Head lamps, Double dip; 50–40 watt bulbs.

SUSPENSION: Front, independent, coil spring and wishbones. Rear, half-elliptic leaf springs with live axle.



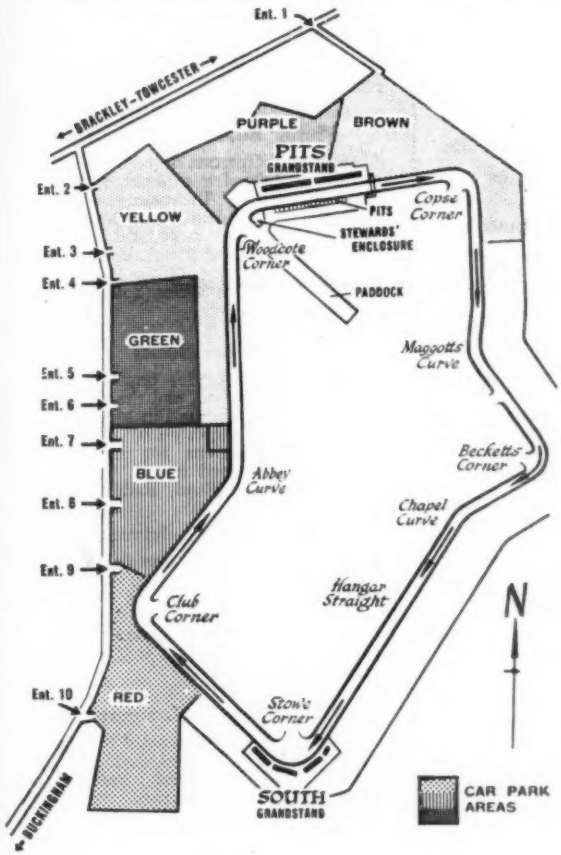
BRITISH GRAND PRIX

Entries, Timetable, Broadcasts, Prospects: Tomorrow at Silverstone

TOMORROW'S BIG RACE, the British Grand Prix, organized by the British Racing Drivers' Club, and sponsored by the *Daily Express*, is the sixth of the series of ten events which this year count towards the Drivers' Championship; already contested are the Argentine, Monaco, Dutch, Belgian and French G.P.s, and still to come are the British, German, Portuguese, Italian and Moroccan. Of the events that have been held, Cooper have won the Argentine (Moss) and Monaco (Trintignant) G.P.s, Vanwall the Dutch (Moss) and Belgian (Brooks) G.P.s, and Ferrari the French G.P. (Hawthorn). The most interesting and exciting outcome, however, of the five events that have been held is the fact that Stirling Moss and Mike Hawthorn together top the Championship table, with 23 points each. The points gained at each of the five events held are given in the table below.

The new Dino Ferrari, which first appeared in formula I form at Casablanca last October, seems now to have got over its initial troubles and to have developed into a formidable match for the British cars which, until Rheims, had things their own way. At Rheims the Ferrari's handling troubles, which had been all too evident at Monaco, seemed to have been cured; Hawthorn's car had a new-found maximum speed that Moss' Vanwall could not match, and out of four cars entered Ferraris finished first, third and fifth: the fourth, Musso's car, crashed when lying second. On form, therefore, Ferrari could well win tomorrow's race. On the other hand, however, at Rheims, the B.R.M.s, too, were faster and proved themselves to be every bit a match for Vanwall; so that, now, we have not only one but two potential winners. The Maseratis, privately owned and at least a year old—some of them much older—cannot really be considered as likely winners, unless the faster, factory-entered cars drop out. The Connaughts, too, cannot be considered to have more than an outside chance. As at the Argentine and Monaco G.P.s, however, there is always the possibility that a Cooper, or a Lotus, may again spring a win on the larger and more costly opposition.

In true Silverstone tradition, there are the supporting events—for production saloons, in which you can see how your own car would look if driven to the limit, and which will show you just how much punishment a production car will stand; sports cars, from which the factory Aston Martins and the Ecurie Ecosse D-type Jaguars will be absent, though the marques will be represented by privately-owned cars; and formula 3, the little Norton motor-cycle-engined cars which often provide as exciting and closely matched a race as their larger colleagues.



NAME	Argentine	Monaco	Dutch	Belgian	French
Stirling Moss ..	8	—	9	—	6
Mike Hawthorn	4	1	2	7	9
J. M. Fangio ..	4	—	—	—	3
J. Behra ..	2	—	4	—	—
H. Schell ..	1	2	6	2	—
M. Trintignant	—	8	—	—	—
P. Collins ..	—	4	—	—	2
J. Brabham ..	—	3	—	—	1
C. Ailison ..	—	1	1	3	—
R. Salvadori ..	—	—	3	—	—
C. A. S. Brooks	—	—	—	8	—
O. Gendebien..	—	—	—	1	—
S. Lewis-Evans	—	—	—	4	—
W. von Trips ..	—	—	—	—	4

TIMETABLE

RACE DAY (Saturday, 19 July)

Sports car race	Begins at 10.45 a.m.
Touring car race	Begins at 12.00 noon
British Grand Prix	Begins at 2.15 p.m.
500 c.c. race	Begins at 5.00 p.m.

B.B.C. Broadcasts

Light Programme: 1.50 to 2.10 p.m.; 2.50 to 3.00 p.m.; 3.50 to 4.05 p.m.

Television: 11.45 a.m., 1.45 p.m., 3.30 p.m. and 3.55 p.m.

Admission Details

All grandstand seats are sold. "All-in" car tickets, which admit the car and any number of occupants, are available at the circuit for £1 10s. Paddock passes, which admit the bearer to the paddock, are available at the kiosk at the entrance to the footbridge across the track, and cost £1. Passes to the Stewards' Enclosure and Pits Balcony are available at £2 10s. Individual admission costs 6s. Admission to practice is 1s; cars 2s 6d. The Silverstone circuit is situated about half-a-mile from Silverstone village, between Towcester and Brackley, on A43; the circuit is accessible by this road, and the Aylesbury-Buckingham-Dadford road, beyond Dadford.

CAR PARKING.—Although cars must be parked in the enclosure corresponding with the colour of the parking label, spectators on foot can circulate freely around the circuit. Actual parking spaces cannot be reserved. Overnight parking is not possible, but the gates will be opened at 5.30 a.m.

PRACTICE PERIODS: Friday, 11 a.m. to 12.30 p.m. (Grand Prix cars); 1.50 to 2.45 p.m. (500 c.c. cars); 3 to 4 p.m. (sports cars); 4.15 to 5.15 p.m. (touring cars).

ENTRIES

British Grand Prix: Ferrari (P. Collins, J. M. Hawthorn and W. von Trips); **Cooper** (M. Trintignant), in R. R. C. Walker's car); **Maserati** (C. Shelby, G. Gerini, J. Bonnier); **Vanwall** (S. Moss, C. A. S. Brooks, S. Lewis-Evans); **B.R.M.** (J. Behra, H. Schell and M. Gregory); **Lotus** (G. Hill, C. Allison, K. Hall); **Cooper** (R. Salvadori, J. Brabham, I. Burgess); **Connaught** (J. Fairman, I. Bueb).

Sports Car Race: Up to 1,100 c.c.: Elva (R. Mackenzie-Low, I. Raby, J. Brown); **Tojeiro** (R. J. W. Utley, T. Bridger); **Lotus** (A. Stacey, P. Ashdown, J. F. Westcott, J. Campbell-Jones, J. Blumer, K. A. Greene, T. Dickson); **Arden** (C. Summers).

1,101 to 2,000 c.c.: Lotus (P. Lovely, G. Hill, C. Allison, R. Salvadori); **Willment** (J. Brabham, S. Lewis-Evans); **J.B.W.** (B. Naylor); **Parson** (S. G. Young).

Over 2,000 c.c.: Lister-Jaguar (S. Moss, M. Gregory, W. Hansgen, A. G. Whitehead); **Tojeiro-Jaguar** (I. Bueb); **H.W M.-Jaguar** (J. Bekaert); **Jaguar** (I. Ireland); **Aston Martin** (P. N. Whitehead).

Touring Cars: Up to 1,100 c.c.: Austin A.35 (G. Hill, L. A. Adams, J. Sprinzel, Bob Gerard); **Morris Minor 1000** (F. W. Marriot, W. G. Wright), **Auto-Union D.K.W.** (J. Sparrowe).

1,100-1,500 c.c.: M.G. (A. T. Foster, V. W. Derrington); **Borgward** (T. Bridger, M. Taylor); **Riley** (L. Leston, I. Walker, G. H. Grace).

2,000-3,000 c.c.: Ford (J. M. Uren, E. W. Cuff Miller); **Austin 105** (J. G Sears).

Over 3,000 c.c.: Jaguar (T. Sopwith, Sir G. Baillie, J. F. Crawley, D. J Uren, R. Salvadori).

500 c.c. race: Cooper (J. F. Denley, S. Jense, D. Truman, G. Cartside T. Bridger, P. R. Ellis, D. Wagner, P. A. Luke, G. M. Jones, D. Parker J. Pitcher, W. E. Ford, S. Bloor, G. H. Symonds, R. A. R. Bell; D. H Phillips, W. A. Jones, G. F. Chippindale, T. H. Shaddick, J. Russell R. T. Spreckley, E. Dawson, P. Proctor); **Kieft** (J. W. Burgoyne); **Beart Cooper** (T. Taylor, S. Lewis-Evans); **J.B.S.** (M. Trackman), **Staride** (G Pearce); **Stuart-Cooper** (P. Robinson); **Flash Special** (I. Raby)

More News and Views

Rootes Export Record

EXPORTS of the Rootes Group increased by 30 per cent in the first five months of this year, compared with equivalent figures for the same period of 1957. Sales in the U.S. and Canada were 43 per cent up and in South Africa they were 56 per cent higher; exports to Australia were almost doubled.

Winter Reduction Short-lived

FEBRUARY'S welcome reduction of ¼d per gallon on U.K. petrol prices came to an unexpected and untimely end on Tuesday when an increase of ¼d per gallon was announced. Inner zone prices now become 4s 2¼d for commercial and 4s 8¼d for premium; super premium is back to 4s 11¼d a gallon. Prices are, as usual, ¼d a gallon higher in the outer zone and 1d higher in the general zone.

"Automobile Engineer"

FOLLOWING the death of Mr. J. B. Duncan, Editor of our associated journal *Automobile Engineer*, Mr. T. K. Garrett, A.M.I.Mech.E., A.F.R.Ae.S., has been appointed Editor; and Mr. F. C. Sheffield becomes an Associate Editor.

Street Lighting Experiments

AUTHORITY has been obtained by Siemens Edison Swan, Ltd., to use Wakefield Road, in the town of Sowerby Bridge, as a test section for street lighting experiments. The arrangement is to continue for an initial period of two years.

Road Tests

SOME readers may be interested to know that there are still a few copies available of the recently published 1958 edition of *The Autocar* Road Tests. This book is available at 7s 6d from newsagents and booksellers, or, at 8s 6d post free, from the publishers, Iliffe and Sons, Ltd., Dorset House, Stamford Street, London, S.E.1.

Also of particular interest at this time of year is *Caravanning and Camping*, which costs 8s 6d from newsagents and booksellers or can be obtained from the publishers, at the above address, for 9s 2d, post free.

Finland Joins the Throng

REPORTS that customs documents were no longer needed for temporary import of cars into Finland have now been confirmed. Italy, Portugal and Spain (in addition to the U.K.) remain as the only countries for which a triptyque is required.

A.A. "Book of the Year"

A FULLY illustrated edition of the Automobile Association Road Book of England and Wales—almost twice the size of the normal Road Book—has been published. It is, in effect, the invaluable motoring companion (complete with gazetteer, touring routes and maps) which is so well known, with the addition of more than 1,700 line drawings illustrating interesting and odd sights to be seen. The volume is available to A.A. members at £1 10s, compared with the £1 charge for the Road Book without the illustrations.

Change of VW Chairmanship

DR. HANS BUSCH, secretary of state for economic affairs in the German Federal Ministry, has been elected chairman of the Volkswagen board of administration. The former chairman, Alfred Hartmann, secretary of state of the Federal Ministry of Finance, continues as a member of the board.

Next Week

- ★ Full report of Saturday's British Grand Prix meeting at Silverstone.
- ★ Road Test—Daimler Majestic.
- ★ The Isle of Wight for the motorist.
- ★ Sparking plug developments.
- ★ Illustrated Accessory review.
- ★ All the regular weekly features and news.

Upward Trend Continues

SALES of American Motors Rambler cars were up again in June, and totalled 14,876—16.1 per cent higher than in June last year. This is the ninth consecutive month in which Rambler sales have exceeded those for the corresponding month of the previous year.

Plans for Service Areas

IT is proposed by the Minister of Transport that drivers should have the largest practicable choice of brands of petrol and lubricants at each of the four service areas which are to be built on the London-Birmingham motorway, and for which land has now been acquired. A fifth service area is to be provided on the St. Albans By-pass. Each of them will cover about 10 acres, evenly divided on both sides of the road, with a linking footbridge across the motorway.

Dearer Insurance Discounted

FORECASTS of an impending increase in premium rates for car insurance were discounted by Mr. Charles F. Trustram, chairman of the British Insurance Association, at the annual general meeting.

Concentration on making roads safer, designing safer cars and checking the condition of old cars was necessary, but the essential problem was that of the human being in the driving seat and his qualifications to be on the road—not merely technical qualifications—but those of temperament, consideration, commonsense and patience.

Road accidents were caused, he said, by inconsiderate, inexperienced, careless or over-confident drivers.

Dauphines in Ireland

PRODUCTION of the Renault Dauphine started on Monday at the company's new subsidiary—Motor Distributors, Ltd.—in Dublin. Initially, all raw materials for the cars are being imported from France, but later on components such as tyres and batteries will be manufactured locally. A new company called Renauto, Ltd., has been formed to handle the distribution and sales of Renault cars in Ireland.

Motor Industry Diplomas

COLLEGE diplomas have been awarded to the following students of Loughborough College of Technology, who have successfully completed the Motor Industry four-year residential course: J. F. V. Allin; E. Bahary; A. E. F. Caffyn; P. F. C. Crowley; J. Giles; P. F. Leat; V. G. Lucas; E. H. Miller (South Africa); A. T. Smith.

Motor Bowls

A MOTOR industries bowling society has been formed, and the first game has been played on the Finchley Bowling Green. The subscription is 5s per annum. Applications for membership should be addressed to Mr. C. Gibson, 83A, Longbridge Road, Barking, Essex.

For Owner-drivers

COURSES of instruction in car maintenance will be run during the 1958-9 session, beginning in September, at the Wesley Institute, Stonebridge, London, N.W.10; the courses will be planned for beginners as well as for the more experienced.

Travel Service Inaugurated

A NEW branch company of the R.A.C., called R.A.C. Travel, Ltd., has been formed to act as a travel bureau for the general public, whether members or non-members, motorists or non-motorists. Offices have been opened at 66, Haymarket, London, S.W.1, to cope with the new service. It will deal with coach, air and rail tours in addition to normal motoring holidays, and hotel bookings will also be handled.

At the press conference inaugurating this new venture some disappointment was expressed by those present at the lack of individuality about the plans outlined, in that it is offered on the same terms to the general public as to Club members. In defence, Mr. Wilfrid Andrews, chairman of the R.A.C., said that the licences and facilities for such a service could not be obtained unless it was open to the public.

PHOTOGRAPHED IN GERMANY are some of the 22 M.P.s who have just completed a tour to study traffic problems and their solution in Berlin and Vienna. As before, the trip was arranged by the Roads Campaign Council to demonstrate to M.P.s of all parties the contrast between road developments overseas and in this country

Air Bridge Crossings Up

IN the first six months of this year the Channel Air Bridge Service of Air Charter, Ltd., carried 25 per cent more vehicles than in the same period of last year, and passenger and freight traffic increased by 100 per cent. Last month they flew 2,130 vehicles and 7,300 passengers across the Channel—the highest monthly figures so far achieved by the company.

Cromwell Road Developments

ONE-WAY traffic has been introduced at Hammersmith Broadway, London, on the Cromwell Road Extension. A new link road has been constructed, and Hammersmith Bridge Road and Fulham Palace Road have been diverted to connect with the new roundabout. All traffic entering the Broadway area now travels in a clockwise direction.

The next stage in the Cromwell Road Extension scheme is to be the widening of Talgarth Road to provide dual carriageways. Many buildings on the north side of the road have already been demolished, and the widening is expected to start in the autumn. The final stage of the L.C.C.'s part of the scheme will be the construction of a viaduct between the widened Great Church Lane and the new Great West Road, which will enable through traffic between the West End of London and the Great West Road to avoid the Broadway area altogether. Work on this final stage is not expected for a year or more.

Meters—Early Days

MINISTERIAL sixpences flowed into a privileged Mayfair parking meter on 10 July, as Mr. Nugent posed for Press photographers during the inaugural ceremony of the first London parking meter experiment. Meanwhile a fair proportion of the metered spaces in Grosvenor Square and adjoining streets were occupied, and in most cases cars were correctly parked in the bays (marked by white paint) with paid time indicated on the meters. There were a few exceptions, where cars were parked haphazardly in blissful disregard of the new regulations.

Also present at the ceremony was the Mayor of the City of Westminster, and the Mayoral Rolls-Royce illustrated clearly the chief weakness of the parking meter scheme, for in spite of the car's great length there was a yard to spare at one end, and nearly two feet at the other, in the bay in which it was parked. All the bays are about 20ft long: small cars such as an Austin A.35 look lost in them, and the wastage of valuable parking space which has resulted is obvious. Also it would have seemed more intelligent if the bays had been arranged for end-on, instead of side-on, parking to take advantage of the width in Grosvenor Square and some other streets. The number of bays provided could have been doubled without difficulty.

It is an interesting anomaly that although the Mayor of Westminster spoke so favourably of the parking meter experiment at the opening ceremony, the Westminster Chamber of Commerce, of which he is president, has announced its continued opposition to the experiment.

WESTMINSTER COMMENTARY

'Busless London. It *was* quicker without the 'buses. Some preliminary conclusions have been drawn from the study made by the Road Research Laboratory on the extent to which the flow of London traffic was affected by the 'bus strike. The results varied according to the route: on some journeys there was a decrease in speed, but on many others there was an increase and a comparison of average speeds on certain roads in central London showed little difference during the strike from those on the same roads in September 1956, when the number of vehicles registered was lower. There was actually a speed increase of 17 per cent towards the end of the strike, accompanied by an increase of traffic flow of 7 per cent. The increase in journey speed was reported to be largely due to a reduction in the time spent at controlled intersections.

Drink and Driving. The recent speculation about the gravity of the report of the joint committee of the Medical Research Council and the Road Research Board on the connection between alcohol and road accidents, will shortly be resolved: the report is now undergoing revision before publication. It seemed both unrealistic and premature for Mr. Page, the pedestrians' champion, to press the Government at this early stage to bring forward what he termed "some constructive proposals" while the report is still in the hands of Mr. Watkinson.

Severn Bridge. Hopes have been raised by Mr. Nugent's remark that the Minister of Transport intends to release the starting date for the Severn Bridge as early as possible. This is taken to mean that the announcement will be made before the House rises for the summer recess at the end of the month.

Towing Away. The Metropolitan Police have towed or driven away 12,675 vehicles from London streets in the first 13 months of the new regulations (1 May 1957 to 30 June this year). The Home Secretary replied to the contention that far too many cars were being towed away which were not causing obstruction in any intelligent interpretation of the word, by saying that there had been "a noticeable improvement in traffic circulation." Mr. Butler added that the order "has resulted in a reduction of dangerous parking, particularly at road junctions, pedestrian crossings and their approaches."

B.M.C. Landmark

THE 2,000,000th export vehicle has been shipped abroad by the British Motor Corporation; it was a 7-ton truck destined for Malaya. An Austin-Healey Sprite bound for America was the 2,000,001st export vehicle.

Four-stroke Goggomobil Coming

NEWS has come from our correspondent in Bremen, Germany, that the long-awaited 600 and 700 c.c. four-stroke-engined Goggomobils are "to appear very shortly." The power outputs of the two engines will be 20 and 28 b.h.p. respectively.

Australian Standard Resignation

MR. C. C. CROSBY has resigned from the post of managing director of Standard Motor Products, Ltd., in Melbourne, Australia. He will continue to serve as a director. This resignation, following closely on Mr. Crosby's return from negotiations for the assembly of Mercedes-Benz vehicles at Standard's Fishermen's Bend factory, is reported to have surprised the industry in Australia.

Cars for China

COMMUNIST China has plans to turn Peking into a car and tractor centre within two or three years, when it will be able to produce these vehicles by tens of thousands every year. A Peking broadcast said that the first Peking-made car, the Ching Kangshan, had been produced, and flow production of cars and tractors would begin in a few months. Present production facilities will be pooled and expanded, entailing much smaller costs than building entirely new factories or allowing factories now trial-producing cars and tractors to develop separately.

Since the beginning of the year, more than 150 types of tractors and nearly 40 types of motor vehicles have been trial-produced in China. Until the end of 1957, China had not produced any tractors, and only one type of lorry.

Toughest Alpine . . .

(*Continued from page 84*)

hazardous nature of so many of the roads.

From Megève, cars started at 4 a.m. on the Friday morning. Now it was to be hard going all the way to Marseilles, by cols and lanes which made up several times the distance of the direct route. At times there were five cols at a stretch, without any normal motoring in between; at Gap alone was there a break, and this only long enough to get food. The runners were so reduced in number that the organizers decided to set the slower cars off first, but with intervals increased so that the fast cars would not have to try to overtake on the narrowest cols.

Thus, one watched as a car at a time raced over the Mont Revard, completing a special speed test; and over the Col Luitel, a well-surfaced but very narrow, long pass dropping down to cross the main road near Vizille, to the south east of Grenoble. Revard proved "impossible" and, to everyone's relief, was later struck out of the results.

One could not help but admire the girls. Gone were the immaculate appearances which always surprise newcomers to the Monte Carlo Rally; Alpine dust covered them, even when they had the protection of saloon cars. In hard-tops such as the Austin-Healeys the dust overcame all defences; Pat Moss and Ann Wisdom were a dark grey colour wherever their skins were exposed. But they all drove beautifully, Moss, Mitchell, Handley-Page, Grounds, Annie Soisbault. . . . Only Anne Hall had crashed on an earlier stage.

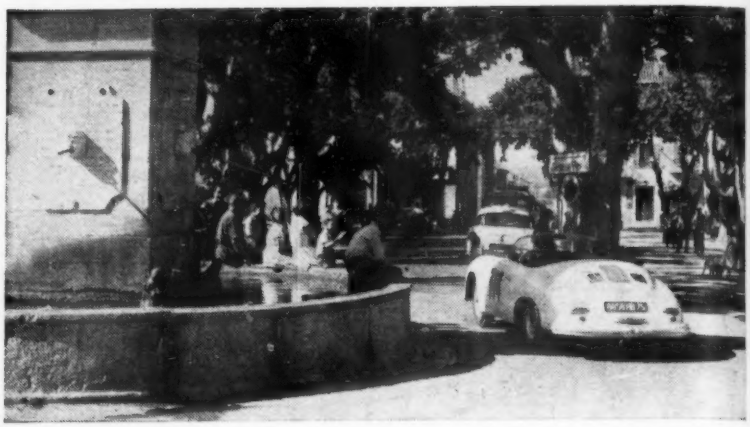
As Gap got nearer, so the hopes of Alpine Cups receded—as one car after the other failed to achieve its set time over the Soubeyrand. Tired drivers did their best with tired cars to achieve what had been proved possible beforehand by the organizers, but not one could do it. At Gap crews had only the comfort of knowing that their rivals were in the same boat as themselves; but after the finish it was announced that both the Soubeyrand and d'Izoard times were to be used only for deciding ties.

Nearly Out . . .

At Gap Pat Moss came in with oil pouring out under the car. She said she would have to retire, but instead received instructions to disconnect a breather which had somehow become damaged. The pressure had been forcing oil past the rear main bearing. This task was completed in seconds as soon as the car was out of the *parc fermée*, and the clutch slip which had also been caused soon stopped.

The Rapiers of George Hartwell and Peter Harper had squeezed time to adjust the brakes again—and it was evident that Harper had recently changed a wheel. He was more fortunate than Jack Sears, however, who reckoned by the finish to have changed about six or eight wheels (from undisclosed sources). On the other hand, Harper had been making enough time to change two brake shoes at four consecutive controls.

Several cars left Gap not knowing whether they were still in the Rally or not; they had taken a road which was incorrect, although bearing the right number, and had missed a control. The drivers were so tired at this stage that they almost wished to be told that they were out. The gallant Standard Ten of Corbishley, which had been going so well, went out with gear box seizure, and mechanical trouble also put out the only remaining A.C.



Above: Storez' Porsche passes crowds of children at St. Maximin-La Baume. Below: John Sprinzel and Willie Cave approach Berzo, in one of the little Austin-Healey Sprites that made such a brilliant rally debut in the Alpine—fitted with a hard-top, in this case

Now it was not a case of cars running out of road on the last section so much as road running out of cars. Adams was only just motoring; he tried to fit new pads to the disc brakes, only to find that his spares were the wrong size. From Gap, 31 cars set out on the last round-about run to the finish. Marseilles, normally not greatly liked by those who know it, now seemed most inviting.

Soon after Gap, Bueb, in one of the very few modified cars still running, crashed and retired. Later, Gott lost a wheel when a half-shaft broke and he, too, had to retire. Then, just after lunchtime on the Saturday, in they all came to the circuit of J.-P. Wimille in Marseilles. Now the tiredness slipped into the background—there was only the final speed test and that would be that.

In the test most drivers, already having lost marks, were mainly concerned with finishing. Few had brakes, few were really still capable of coping properly with a racing circuit. Sopwith must be mentioned, however—he put his Rapier round so fiercely that everyone watching doubted that it would even complete the test—but it did. So did the 24 other finishers. The total was 25 out of the 58 that started.

Not since 1946 has the whole field failed to gain an Alpine Cup on the schedule as originally planned; rarely has the entry in an international rally been so heavily reduced. Nevertheless, Bravo to Sprinzel, Wisdom and Brookes (all Sprites); Miss Handley-Page, Hartwell, Harper and Sopwith (Rapiers); Meredith-Owen and Bennett (Rileys); Ballisat and D. Titterington (TRs); Grounds (A.105); C. Harrison, Adams and E. Harrison (Zephyrs); Capravesnes (D.S., the only French car); Sears, P. Moss, Mitchell and Shepherd (Austin-Healeys). And finally to the only other group of four cars of one basic type to finish, the winning Alfas of Clarou, Consten, Fabre, Reiss and Perso-Persoglio.

General Classification

1. Alfa-Romeo Giulietta S.V. (Consten-De Lageneste).
2. Alfa-Romeo Giulietta Berline (Clarou-Gelé).
3. Alfa-Romeo Giulietta Berline (Riess-Wencher).
4. Triumph TR3 (Ballisat-Bertaut).
5. Ford Zephyr (E. Harrison-Habershon).
6. Sunbeam Rapier (Harper-Jopp).
7. Austin-Healey 100 (Shepherd-Williamson).
8. Triumph TR3 (D. Titterington-MacCalden).
9. Sunbeam Rapier (Sopwith-Deane).
10. Austin-Healey 100 (Pat Moss-Ann Wisdom).
11. Austin-Healey 100 (Sears-Moore).
12. Austin-Healey 100 (Nancy Mitchell-Mrs Clarke).
13. Ford Zephyr (C. Harrison-J. Harrison).
14. Riley 1.5 (Meredith-Owen-Bradley).
15. Austin-Healey Sprite (Sprinzel-Cave).

Standard Production Cars

Up to 1.000 c.c.—1. Austin-Healey Sprite (Sprinzel-Cave); 2. Austin-Healey Sprite (Wisdom-Hay); 3. Austin-Healey Sprite (Brookes-Wells)

1.001-1.300 c.c.—1. Alfa-Romeo Giulietta Berline (Clarou-Gelé); 2. Alfa-Romeo Giulietta Berline (Reiss-Wencher).

1.301-1.600 c.c.—1. Sunbeam Rapier (Harper-Jopp); 2. Sunbeam Rapier (Sopwith-Deane); 3. Riley 1.5 (Meredith-Owen-Bradley).

Over 1.600 c.c.—1. Ford Zephyr (E. Harrison-Habershon); 2. Ford Zephyr (C. and J. Harrison); 3. Austin A.105 (Grounds-Shanley).

Grand Touring and Modified Cars

Up to 1.300 c.c.—1. Alfa-Romeo Giulietta S.V. (Consten-De Lageneste); 2. Alfa-Romeo Giulietta Veloce (Fabre-Morceau); 3. Alfa-Romeo Giulietta Veloce (Bersoglio-Muller).

Over 1.600 c.c.—1. Triumph TR3 (Ballisat-Bertaut); 2. Triumph TR3 (Titterington-MacCalden); 3. Austin-Healey 100 (Pat Moss-Ann Wisdom).

Coupe des Dames.—Austin-Healey 100 (Pat Moss-Ann Wisdom).

X-HAND MARKET GUIDE

Used Cars on the Road—128

1951 LEA-FRANCIS 14

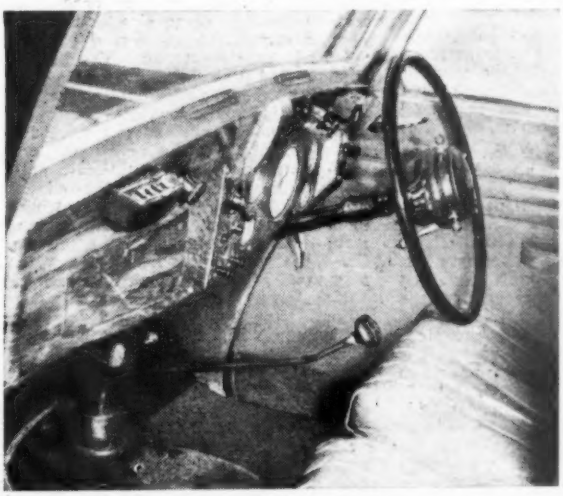
Basic price new	£1,080 0 0
Total price new	£1,380 15 0
Price secondhand	£385 0 0
Acceleration from rest through gears:	
to 30 m.p.h.	7.8 *sec*
to 50 m.p.h.	19.3 *sec*
20 to 40 m.p.h. (top gear):	10.8 *sec*
30 to 50 m.p.h. (top gear):	13.5 *sec*
Petrol consumption	19-22 *m.p.g.*
Oil consumption	1,000 *m.p.g.*
Mileometer reading	56,046
Date first registered	*January* 1951

Provided for test by Eagle Motors (Norwood), Ltd., 1, Crown Point, Norwood, London, S.E.19. Telephone: GIPsy Hill 6313.

USED car assessment is inevitably tempered by thoughts of what a particular vehicle was like when new, especially with cars such as this Lea-Francis 14, which were obsolescent in many respects even at the time of construction. In spite of the facts that some improvements in the specification were made from time to time, and that the car was introduced as a new model in 1946, the basic design conception is essentially pre-war. The frontal appearance alone dates it, and it is a cumbersome car to drive; nevertheless, the solidity and quality of its construction are still very evident, and the degree of deterioration is low for its age.

The bodywork is a combination of steel and aluminium panelling and apart from one or two tiny dents the black paintwork in which the car is finished is in excellent condition and creates a very good first impression. The chromium is also well above average for an eight-year-old. Inside is seen at once one of the worst features of this example—roof linings which have sagged and are extensively stained. In the short spell of rain which fell during the test there was no leakage from the sliding roof, but the roof linings were evidence that rain must have found its way into the car at some time in the past, and the harm had been done before the fault was rectified.

Apart from this, the internal appearance is well up to the standards of the exterior; the beige leather of the seats is sound and clean, and the lacquer work of the wooden facia and trimmings



It seems remarkable that a car can continue for over eight years in the hands of three owners without having a heater fitted; in fact there were no accessories on the Lea-Francis. The handbook is in the facia locker

The standard equipment of the car included a fog lamp, but this has been removed by a previous owner; and although there is a radio aerial on the roof the set itself has also been taken away. The external appearance of the car has been cared for and gives a good impression

is only slightly cracked. The brown floor carpets show more signs of wear, and are dirty over the gear box hump, but they do not detract from the general good impression. The rear window blind has suffered from lack of use and is tattered and dirty. The sliding roof is stiff but can be opened.

The engine of the Lea-Francis has the old but satisfactory arrangement of hemispherical combustion chambers in which the overhead valves are operated by short pushrods and twin camshafts mounted high on both sides of the block. Starting was always instantaneous, and the unit would pull without hesitation or stalling immediately after a cold start. It is a long-stroke unit of 1,767 c.c., and although it proved quiet and very flexible at low speeds the power output is not high for the weight of the car. Good as it was considered in its day, the performance is no more than adequate by present-day standards. Some engine noise begins to develop at about 55 m.p.h., but this is not sufficient to rule out speeds between 50 and 60 m.p.h. as a comfortable cruising range. The fairly heavy oil consumption recorded may be due partly to leakage, which was evident from one or two places on the exterior of the engine, but another sign of wear was that fumes were smelt frequently inside the car.

No deterioration is evident in the gear box, the synchromesh is still effective, and the indirect ratios are quiet. There is no clutch judder, but the take-up occurs suddenly over a small range of pedal travel.

Unusually heavy brake pedal pressures are required, but satisfactory straight-line braking could be obtained with confidence when the necessary effort was applied. The handbrake was effective and convenient to use.

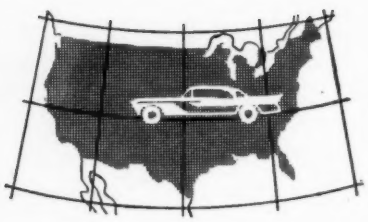
It would be quite possible for a driver unfamiliar with the design of the Lea-Francis to imagine that the car has rigid axle and leaf spring suspension front and rear, because the characteristics of the ride are typical of this. In fact, independent front suspension by torsion bars, using the damper arm as the upper link, is fitted at the front, and the firm, quick pitching movements at the front end indicate some weakness in the dampers. The suspension acts quietly, but the ride over bad surfaces is poor. The steering was positive but heavy on corners, requiring some effort to pull the car round. Directional stability is only fair, yet the car's cornering is satisfactory, and quite adequate for the speeds at which it would normally be driven.

A mixture of tyres is fitted, of which two are remoulds; the front tyres are nearly new, but on the rear wheels they are about due for replacement. A new spare is to be provided by the vendors before sale. The toolkit is almost complete.

With the exception of the brake and reversing lamps, all of the electrical equipment was working efficiently, but the battery showed signs of corrosion.

When the underbody of the car was inspected it was found that hydraulic fluid was seeping from the brake reservoir, but it is understood that this and the one or two rattles which came chiefly from the driver's door and the exhaust system are to be rectified by Eagle Motors before the car is sold. The underneath of the Lea-Francis is in good condition.

To summarize, the car gave the impression of being a fair and representative example of the Lea-Francis 14, in sound condition for its age; but the model itself, mainly because it is obsolete, is something of a disappointment.



Detroit notebook

SMALL CAR SALES BOOM: CENTRALIZATION FOR CHRYSLER: INTERNAL COMPETITION: TYRE DEVELOPMENT

Roger Huntington, A.S.A.E.

THE small foreign car sales boom continues apace over here . . . and Detroit brass continue to tear hair, chew nails, and generally wonder what to do about it. The latest market penetration figures are over 7 per cent. I can remember a year or so ago when auto executives were saying Detroit's "concern point" on foreign car sales would be around 5 per cent market penetration; the implication was that Detroit would be more or less forced into the field when public demand got above this point. Now I see that Byron Nichols, Chrysler Corporation vice-president, has stated in a recent talk that Detroit now considers a 10 per cent market penetration as a logical concern point.

I can vouch for the fact that our big company executives are terribly concerned about the solidity of this small car market; they fear it may be a passing fancy—and that it might pass just about the time Detroit had spent hundreds of millions to tool up for its own small cars. Managements do not know which way to turn. The most immediate result will be an all-out effort to dress up the conventional 1959 models into the most attractive packages Detroit has ever offered. They're hoping to smother the desire for small cars with an unprecedented display of sheer size, power, and luxury.

If this doesn't work . . . well, you'll be interested to know that only a week ago, I heard that top G.M. executives have just made the final decision to produce a small car for the American market. Target date for introduction is autumn of 1959. It will be produced by the Chevrolet division, and tool orders are well under way.

* * *

AUTO enthusiasts are generally more interested in bodies and gears than they are in ledgers and cost sheets . . . but certain internal organization changes put into effect at Chrysler Corporation a few weeks ago could have a considerable impact on future design trends over here.

Students of auto history may recall that Chrysler tried to copy General Motors' very successful organizational structure in the early '50s. The various car divisions in G.M. are very nearly self-supporting entities. They do their own designing, testing, tooling, manufacturing, assembling, advertising, and maintaining sales and service organizations. Sales competition is intense between the divisions (especially between Buick and Olds). The G.M. central governing body merely sets policy, sets budgets, and operates facilities for basic research. (In fact, when one of the car divisions want G.M. Research to do a specific test project, they have to pay the going rate for that kind of work—or else rent the Research equipment and facilities to have their own men do the work.) Many automotive observers have said that this weird and wonderful organizational structure is the big secret of G.M.'s success in this cut-throat U.S. auto market for 40 years.

Anyway, Chrysler Corporation put a number of organizational changes into effect in the early '50s that tended toward more separation of division operations; they figured what was good for G.M. would be good for them. They never went nearly as far with the separation as in G.M., but it was a trend that had a noticeable effect on overall operations.

Now, all of a sudden, they are making a complete about-face. Car production and assembling operations, maintenance of the field sales organization—and most of the engineering—are now handled by a central body. The divisions themselves would seem to be little but empty shells; their main function will be to handle advertising and sales promotion. Division engineering departments will act more or less as liaison groups; the DeSoto engineering staff, for instance, consists of only 25 men.

Chrysler have not given any hint of a reason for the change, but the most obvious answer, of course, is money. Chrysler are in the red this year. All salaries over $10,000 have been cut, staffs are being trimmed—and it seems likely that this organizational change may be just another cost-saving idea. Could be that the perfect setup for a giant like G.M. might prove to be too much duplication of manpower and facilities for a smaller outfit like Chrysler. (Incidentally, Ford Motor Company—which is midway in size between the two—integrates the Lincoln, Mercury and Edsel operations, but keeps them well separated from the Ford operation.) In the case of Chrysler, the fact that the divisions are retaining their sales promotion autonomy would indicate that the brass are still trying to maintain competition between the divisions—but without duplicated facilities.

Only time will tell how the idea will work financially. From the design standpoint the change is bound to mean even more styling similarity and part interchangeability between makes; this could be good or bad. If Chrysler can continue to blaze trails like they did with their "Flight-Sweep" styling, the new deal could mean more profit per unit. If they fall just one step behind it could be "United we stand—united we fall."

* * *

SPEAKING of sales competition between divisions within a corporation, I'm sure my British readers really have no idea just how rough this business gets in G.M.—and the sales slump these last few months has only accentuated the rivalry. One new gimmick that crossed my desk the other day is a "confidential" bulletin for Buick salesmen of arguments they can use to convince people to buy Buick instead of Oldsmobile!"

Here are a few quotes against Olds styling: "Styling is strictly non-functional. The side mouldings appear as though they were simply hung on without any particular purpose. There's no uniformity to the lines. . . . There's nothing special about the Olds grille. Take away the crest, and most people would have a hard time identifying it. . . . The Olds grille looks exactly like what it is—an inexpensive metal stamping. . . . Oldsmobile pretends to be a big car, and it doesn't even provide a built-in licence plate frame. . . . Olds offers nothing but the outmoded button-type horn. . . . Oldsmobile's glove box . . . is so shallow you can hardly get your hand into it."

On Oldsmobile engineering: "Oldsmobile still uses the 45deg angle valves in its engine; this means lots of wear and poor valve lubrication (!). Oldsmobile has not changed its valve design in nine years. . . . The old four-point engine mounting . . . does a fine job of transmitting engine vibrations right back to the passenger compartment. . . . Old-fashioned 'buggy' springs are all that Olds has to offer unless the customer wants air ride. . . . Oldsmobile's drive shaft is exposed and subject to all sorts of damage. . . . Oldsmobile has switched to the 14-in wheel, but—because its tyres are larger—there is almost no difference in its height. The big difference is in Olds' smaller brake drum, which means more heat and less cooling. . . ."

You'd get even more of a laugh from some of the good points made on Buick features. For instance: "Buick styling is functional and is remarkable for its clean design. The sweep-spear protects the side of the car. No chance of scratched or chipped paint here. . . . The lines are beautiful, but this is beauty with reasons behind it." Now go take a good look at a 1958 Buick for functional styling!

* * *

I MENTIONED the battle between nylon and rayon for the American tyre cord market recently; since then there have been new developments. It has been known for some time that Chevrolet officials had been negotiating with various tyre companies for the purpose of introducing nylon-cord tyres as standard equipment on '59 models. Rumour had it that the deal was all but closed, and that the parties were agreed.

Now suddenly Chevrolet drops the whole thing—it turns out that price was still the bug. Chevrolet were not willing to pay *any* price differential, and experiments by the tyre companies showed that the strength of a nylon tyre would have to be reduced substantially to match the price of an equivalent rayon-cord tyre. (How the strength would compare with a standard rayon tyre is not known.)

Needless to say, the development was quite a blow to the nylon people. The competition with rayon has been at fever pitch for several months, and this was to have been the big "foot in the door" for nylon. In fact, the day after the Chevrolet news, DuPont and Chemstrand (our big nylon producers) cut the price of their nylon by 7.7 per cent, thinking it might get Chevrolet to reconsider. No action yet—it is estimated the tyre price differential is still 5 per cent. In the case of Chevrolet that would add up to only about $1.00 per car . . . but don't forget that they build over a million a year.

DELIGHTFUL SPOT for a picnic, on the broad stretches of beach at Black Rock Caves, near Criccieth, Caernarvonshire—but not, one would think, well suited to car finish and underbodies

Correspondence

Easing the Flow

Fly-over Would Solve a Problem. The Duke of Edinburgh's suggestion of a roadway through the centre of roundabouts on busy routes has met with the criticism that traffic lights or police would be necessary to enable cross traffic to flow from time to time; this criticism arises from the assumption that a road at ground level was intended. If, however, the supplementary road was raised, and crossed the roadways forming the roundabout as well as the central area, the idea would be very attractive. Such a roadway, 20 feet wide and raised 15 feet to clear buses using the roundabout, would carry a double stream of traffic in one direction and have the same traffic capacity as the main road. The bridge could be limited to two tons and be used to carry traffic in the direction in which flow was greatest. Heavy traffic, and traffic in the other three directions would continue to use the roundabout.

London, N.W.9. W. R. H. LOWRY.

Touring in Yugoslavia

Recent Experiences. Having just returned from my third trip by car to Yugoslavia, I was naturally interested to read Mr. Herne's article (4 July), which I consider to be unnecessarily discouraging to prospective tourists by car. I agree that there are many bad sections of roads, but there is far more good road in the country than Mr. Herne would lead one to think, and great efforts are being made to complete the Dalmatian highway from Rijka to Kotor and on to Titograd. I feel that so much depends on the suspension of the car when considering whether a road is good, rough or very rough, and a bad-sprung car is definitely unsuitable.

As regards petrol, the position is greatly improved over last year, and the location of petrol pumps is easily ascertained from a good map, obtainable from the Yugoslav National Tourist Office in Regent Street—Map of Jugoslavia 1:800,000 Auto Motb Zveza Slovenje, which also classifies the roads into good, bad and indifferent; at times it is a little previous, but helpful.

In the course of a long tour I had no real trouble in locating Super grades, but it is advisable to keep the petrol tank filled wherever possible. Normal grade needs some retarding of the ignition—simple enough to do.

As for food and drink, I can only say that I ate the finest meal in my 25 years' experience of "foreign touring" in Zadar at a modest price—six courses; that the red wines (open) were usually better than the white, and that Procek, a sweet rosé, is most pleasant. I had no trouble with the Cyrillic alphabet as I hardly met it, even in small towns or villages in the south-east; it may be another matter if one goes east of Titograd. The car this year was a Ford Zephyr 1958, last year a Zephyr of 1956, both with overdrive—a great boon on alpine roads.

Solihull, Warwickshire. W. E. PATTMAN.

Fly-By-Night

How to Average Over 50 m.p.h. I would like to endorse Mr. H. H. Porritt's letter, Benefits of an Early Start (13 June). To my mind the only pleasure motoring to be had these days is at the crack of dawn, particularly if you have any distance to cover. My family and I left Billingham-on-Tees, Co. Durham, in my 1955 Humber Hawk Mk. VI at 4 a.m. on Sunday 13 April and arrived at Mill Hill, London 4hrs 35mins later, distance 229.5 miles, average speed 50.1 m.p.h. The distances I covered in each of the four hours were 48, 53, 54 and 55 miles respectively. I did not set out to break any records—just to maintain a fast cruising speed; the needle was round the 70 mark most of the time and at no time was I anything like "flat out." I did the

Correspondence

journey non-stop, with the amazing petrol consumption (particularly at that speed) of 27 m.p.g., actual—empty tank to empty tank (I ran out of petrol just short of London Airport).

For longer journeys I recommend anyone to travel overnight—it is a pleasure, particularly on Saturday nights when there are very few goods vehicles about. For the past three years on our annual holidays we have left home at 6 p.m. on the Saturday night and have been in Dover, Cornwall, and Bournemouth respectively the following morning—and towing a caravan in each case. The moral of this letter—you can "fly by night."

Billingham, Co. Durham. LES BARTLETT.

Anti-change Gang

An Injection of Facts. May I be permitted to introduce some facts into the correspondence? From *The Autocar* Road Tests over the past 30 years it can be seen that post-war cars are: faster and have superior acceleration; better braked; smaller internally; more softly suspended; slightly more economical in petrol.

From used car tests it is apparent that they have a much shorter life. There is no evidence to show that they are more stable, but the following points taken from post-war tests do not appear in those of the vintage era:—Defects in accessories; difficulty in engaging first gear—this has been mentioned several times this year; uncomfortable seats; badly placed pedals (a fault in only one pre-war model); inadequate and poor quality tools; cramped leg room.

Points which can be seen from sources other than tests are: modern cars cost more to maintain due to inaccessibility; old cars were more sturdily built and withstood "bumps" better; modern cars are noisier, not in a mechanical sense but through drumming and the transmission of road noise.

It is a pity that the many good things which research has provided for the modern motorist are spoilt by a shoddiness and a love of ornate and useless "ornamentation." All change is not necessarily progress: for example, the simple semaphore signal which was self-cancelling is superior to a flashing light, which I have seen going on for several miles because of a reliance on warning lights and stalks sprouting from the steering column.

I hope that the motoring Press will set its face firmly against shoddy, flimsy and unpractical gadgets while supporting real progress, i.e., independent rear suspension.

Canterbury. N. J. WHITE.

Reply to Tim Emarcheson. May I again be permitted to disagree with Tim Emarcheson (4 July). His first letter (11 April) showed many signs of intolerance, and contained many unqualified statements going much further than saying "I suggested." In my reply (9 May) I gave him a fair answer to every point in his criticism, and I would like him to say which of my answers are incorrect. Will he kindly state any facts about motoring in 1958 where reliability is greater than in 1938.

In reply to SGN 164, a 1936-7-8-9 Rover Twenty did all that his present 6/90 will do, excepting as I have said before, the extra speed from better petrol; possibly some test reports are available to prove this. HERBERT JONES,

London, W.5. Lieut.-Commander R.N.(Retd.).

[With the publication of this letter, public discussion on this subject is closed; if the protagonists wish to continue it privately we shall, of course, continue to forward letters when asked to do so.—ED.]

Tourist Offices

Attractions of Ireland. In your issue of 13 June you give a list of tourist offices in London but you seem to have overlooked the Irish Tourist Office at 71, Regent Street.

Many of your readers who may feel a bit tremulous about venturing to a foreign-speaking country for the first time abroad may be interested in making a first trip to Ireland where there are no language or currency difficulties.

Sheffield. JOHN N. MULCAHY.

Courtesy Horn

Distinctive "Thank You" Tone? On many occasions I would like to acknowledge, in a simple and effective way, acts of courtesy displayed to me, a motorist, by other road users. Why not a Courtesy Horn, of pleasant, distinctive note, uniform on vehicles throughout the country? Thus will we dispense with the tooting and hand-waving which can now be misinterpreted, and foster the vital spirit of co-operation, so necessary if road manners are to improve and accidents decrease.

Chalfont St. Peter,
Buckinghamshire. HERBERT H. CRABB.

Stop the Racket

In Defence of the Scooter. As the owner of a sports car and a scooter, I feel that whilst in agreement with the main points of your leader (4 July) I cannot agree that scooters are among the most notorious offenders. Surely the more powerful motor cycles are a far greater menace not only to sleep but also to life and limb.

Lessening noise created by "heavies" is largely an engineering matter; but excessive noise of sports cars and motor cycles is usually due to irresponsible and perhaps inexperienced driving.

Farnborough, Kent. L. BRAYBON.

Shilling in the Slot

Brief Experiment on the Brighton Road. Mention is made by The Scribe (20 June) of a slot machine type of petrol pump. Around the 1930s a shilling-in-the-slot pump was in operation in at least one garage to my knowledge—at Patcham, near Brighton, on the main road. The installation was a Bowser, one of, if not the first, pumps in this country after the 1914-18 war. Apparently it was soon found to be "workable," as the pump itself was very simple in its operation, and the insertion of a shilling, to those who knew the method, was sufficient to fill the tank. Needless to say, the proprietor was not long in withdrawing this portion of his service to the public.

Purley. R. RUSSELL.

Austin Seven Clutch

And Thoughts on Diesel Fumes. In your Road Test of the Austin A.35 (4 July) you are, I feel, unfair to the Austin 7; the clutch on this car may have been abrupt, but at least you knew exactly when it was going to engage; and the worst that I experienced with the five that I owned was an infrequent "hot smell"—and distinctly less infrequent slip. With the modern clutch, though, you never know where you are: this is due entirely, I think, to the flexibility of the engine mounting. My A.40 Somerset, with a rigid connection between clutch and pedal, makes me feel like a learner, and has given ample proof of the robustness of the transmission; the A.40 Cambridge, with hydraulic clutch linkage, is far more docile.

Incidentally, my last night on N.6, not far from Macon, gave

CHANGING FACE of the countryside as new highways are driven across the landscape; where cows grazed in the spring, an excavator now levels the ground for the construction of the Maidstone By-pass

Correspondence

me many sleepless hours in which to contemplate the advantage of the vertical exhausts on French diesels—which discharged on a level with my bedroom window. My *last* night on N.6.

Croydon, Surrey. J. B. ROSCOE.

Jaguar in America

"Top Value in High-speed Economy." Mr. Parizek (27 June) asks a Jaguar owner who has covered a fair mileage to write and give his experience. I replaced a 1939 Jaguar SS100 with a used XK120 in 1951; this was a very special car, beautifully finished in yellow and black with every imaginable extra, the engine being modified to 140 standards. Performance was excellent, and 25 m.p.g. obtained on long trips—the car had a 3.27 axle. After 41,000 miles, trouble-free, although I replaced the 7 to 1 pistons with a set of 8 to 1 at 20,000 miles to obtain an even better performance, I exchanged her for a nearly new 140 two-seater. This car has covered only 6,000 miles to date, but I have had no trouble at all; a 1956 Mark VII saloon in the family, bought with 15,000 miles behind it, is also performing well.

I cannot understand how the troubles he mentions could happen in several different cars. In my opinion, the Jaguar represents top value in high-speed, economical, big car motoring. I hope my experience will hearten Mr. Parizek and restore his confidence in them.

Cardiff. H. J. PARSONS.

Years of Great Enjoyment. I have read Mr. Parizek's letter (27 June) with considerable interest and some impatience. All his comments seem to be based on hearsay. I have owned Jaguars for the past five years and feel that my experiences as an owner driver would be more factual.

My first Jaguar was a Mark VII, 1953, which I ran for two years with great enjoyment. There were, of course, repairs during that period, but none so major that they have left any lasting impression. The major fault in that car, in my opinion, was the braking, and I had many modifications before the system was satisfactory.

My present car, a type M, I have run for three years, and have covered approximately 100,000 miles. The car is well serviced (when I can spare it) and driven hard. The engine head has been off once at about 15,000 miles, to replace piston rings which were not considered quite satisfactory; since then it has not been touched apart from periodic tuning. The only major replacements to the car have been a new petrol tank at 75,000 miles and replacement front shock absorbers at 85,000 miles.

The coachwork is still very good and rattles are non-existent. Oil consumption is three pints per 1,000 miles, and petrol consumption varies from 16-23 miles per gallon, depending on the driver's enthusiasm.

London, S.W.1. W. J. HAINES.

After 123,000 miles—Bill Under £30. As workshop foreman to a large motor engineering firm from 1946 to March this year, I find it difficult to regard the remarks of your correspondent Mr. G. R. Parizek (27 June) seriously. I would say from my experience of Jaguars, which is not inconsiderable, that they are as durable and trouble-free as any car on the road, English or American. Although we had our share of "finnicks" and tuners, the XK engine will stand a lot of abuse. I recall one 1952 saloon being taken down for the first time after 123,000 miles and being returned with only new pistons, valves and springs; the bill was under £30.

Aldridge, Staffordshire. G. E. ROBERTSON.

A.C. Sociable

Request for Information. Many of your readers will recall the pre-first war A.C. Sociable tricar. I am restoring a 1912 model and although about 18 others are known to exist, very little is known of their production history. I would be most pleased to contact any persons who can provide any titbit of information, and particularly anyone who was employed by the A.C. company prior to the first war.

Southend-on-Sea. L. MATHEWS.

[Letters will be forwarded.—ED.]

HOW TO SELL IN NORTH AMERICA

The Customer is Always Right. The article, "Parasites on Power" (24 August 1956), which by some oversight I missed at the time, supports me in the argument I am continually having in both Canada and America regarding the ridiculous figures quoted for sales propaganda purposes. In recent months, a well-known American car with a power tag of a 300 h.p. plus figure, was run on a calibrated brake; the power at the wheels was found to be 92! However, this is of no great importance. There is no doubt that the American/Canadian car is a most wonderful vehicle, produced at a price that the man in the street can afford to buy and run. The car is produced with consideration for the conditions under which it will operate, and performance and durability leaves little to be desired.

This cannot be said about the U.K. product. Being myself English, and proud of the fact, I run what is considered to be a fairly good-class U.K. car, but please, oh! please, when will the thick heads in the motor industry responsible for exporting vehicles give us something suitable to the conditions here? My criticism is common to all cars, from the cheapest to the most expensive.

Is it not realized that for many weeks during the year temperatures are anything between zero and thirty below? Consequently, the heaters are completely inadequate. We don't want de-misters, we want de-icers! It is a common experience to find, after returning to a parked car, that it is cocooned in ½in thick ice. This wants moving—all American cars can do it, English cars don't. Now I can visualize having B.T.U.s thrown at me by the bucketful, cold-chamber tests, and so on, but the fact, nevertheless, remains—useless.

Second point—bumpers. Sorry, must say it again—useless! After 20 years of driving in England I agree they are adequate for that country. However, on this continent, if your engine fails to start, some kind character at the back will very obligingly give you a push. Granted this will result in minor scratches . . . so what, the bumpers don't fold up. Same with parking; to get out of a tight spot, most drivers nose forward until they touch the car in front, and vice versa. Needless to say, this sort of thing is a nightmare to me, and up to the present I have avoided kind offers of pushes and parking in tight spots. It is no use trying to re-educate one hundred million Americans on driving habits and techniques. U.K. manufacturers want either to sell cars or they don't. A nice robust American type of bumper fore and aft would help.

Then there is the manufacturer who fits a very beautifully designed and engineered, close-limit door lock, with the result that it freezes solid. I would like to hear a smooth salesman try to comfort the owner on this issue, who can't get into his car when the temperature is 20 or 30 degrees *below* zero, whilst the character parked next to him opens up without any difficulty with a vehicle costing perhaps only 20 per cent of the other. Yes, I know the action of the lock may sound like the opening up of the barnyard door, but it is functional.

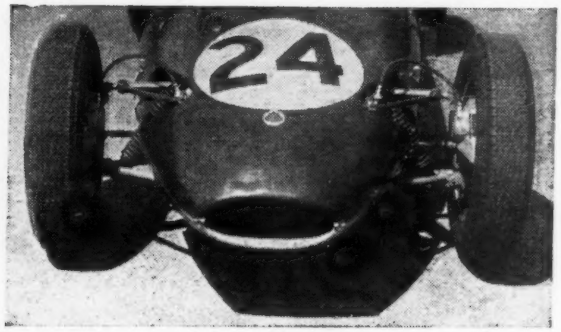
On the car I happen to own the speedo drive comes out of the right-hand side of the gear box, obviously intended for right-hand drives. What do the bright boys do for the left-hand drive? Simply put a tortuous U-bend in the cable which results in frequent failures. After three failures and getting wise to this fact, a re-routing of the drive from the gear box to instrument has cured the trouble. Would it be so difficult to have provision made on either side of the gear box for this, thereby making home and export speedo drives common to both?

I would like to see many more English cars over here. In many respects they are very good. Fuel economy is not a major selling point; fuel here is cheap, and over a 12-months operation the saving is considered by many people with whom I have talked just not worth while, when set against only the few shortcomings I have mentioned. As an example, the modification to my heater system alone has cost me the equivalent of 150 gallons of fuel, which is roughly 3,000 miles of motoring.

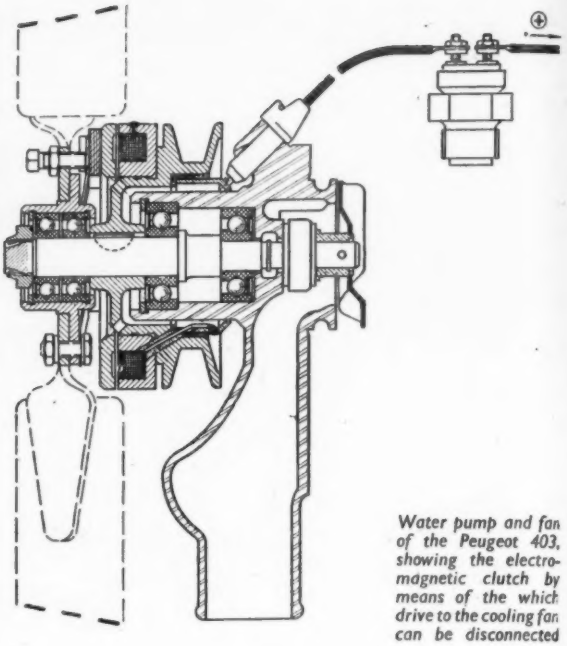
Finally, although the number of cars imported from England might be an impressive figure, percentagewise against the number of cars sold here it is very small. It is now more than a rumour that car manufacturers over here—one, I know, in particular—are considering producing a small vehicle to combat European infiltration. As these would be produced suitably designed and equipped for this market, they would, without doubt, reduce the present demand for the English car.

The answer to this problem does not require some mathematical slide-rule genius to solve. It requires common-sense thinking and the right people to visit this country, who can talk the "language of the west" and, upon returning to England, be able to chop red tape, by-pass the reverend old complacent gentlemen of the board, who apparently are of the "It was good enough for Grandpa, it is good enough for me" attitude, and produce a car that appeals to the American public. Do these things and you *will* sell cars. Never was there a truer saying—"The customer is always right."

Dorval, Quebec, Canada. KENNETH H. PARKER.



Typical of the small air intakes which can be used when the cooling problem is approached aerodynamically is that seen in this picture of the new formula I Lotus, which made its debut in the French Grand Prix at Rheims on 6 July



Water pump and fan of the Peugeot 403, showing the electro-magnetic clutch by means of the which drive to the cooling fan can be disconnected

TECHNICAL TOPICS

Power Developed and Used

IT is obvious, from the letters received from time to time, that readers are confused by the horse-power ratings quoted in our road tests and descriptions of new cars. They enquire, for example, "my Dingbat Special with the engine delivering 80 h.p. is passed by the new Boudoir saloon with only 75 h.p., and yet my own car is nearly one cwt lighter—why is this?"

First, I would like to point out that this journal—as indeed are all others—is entirely dependent upon the power output figures supplied by the manufacturers. It would be impossible, financially and physically, for us to carry out a bench test on each engine of each car, which would be the only way to arrive at truly comparative figures. Thus, the only way of drawing such comparisons is by the figures published in the road tests, in which the power developed at the wheels is suggested by the figures recorded.

Apart from what the sales department of some companies think—which is often reflected in the quoted horse-power—the test methods vary widely from country to country, and even between manufacturers in some countries. In Britain there is no set test code of rating; the same applies to the majority of French and Italian manufacturers. In Germany there is a standard, the DIN (Deutsche Industrie Norm), which stipulates that the engine shall be tested with all normal accessories running, and loaded as they would operate under road conditions.

Many manufacturers quote the American SAE rating, but this is extremely vague in its wording of test conditions, stating that only parts essential for engine testing operation need be used; in fact, many manufacturers disconnect water pumps, and some even oil pumps, when recording figures.

Of recent years most American manufacturers have followed the General Motors test code, in which the water pump is operating but the generator is run with no load. What is most misleading, however, is that the spark advance and fuel mixture are adjusted by hand at each setting to obtain the maximum torque figure, and the carburettors are run with no heat pick-up from the exhaust. This provides useful information to the engineering department, but means nothing to the customer.

One other small difference of these horse-power ratings is that the British and American unit of horse-power is based on 33,000ft lb of work per minute, whereas the Continental one used by German, French and Italian manufacturers is based on 4,500 metres-kilogrammes per minute; thus, all Continental ratings are lower by 1.4 per cent than their British and American counterparts.

After the figures recorded on the test bench have been worked out, they are then corrected to correspond to standard barometric pressure at sea level—29.92in Hg with no humidity, and an air temperature of 60 deg F. The under-bonnet conditions of a car are always worse than this, so far as the engine is concerned, because high temperatures reduce the *weight* of air—and it is a fundamental of the internal combustion engine that its developed power is in direct proportion to the weight of air consumed.

From the developed horse-power thus determined, the power needed to drive all the engine accessories must be taken into account; many such accessories have to be designed to be efficient when pottering in traffic at 20-30 m.p.h., so that, for most of the time, they are absorbing a lot of power unnecessarily. This applies particularly to the cooling fan, some of which, with multi-blade layouts as on the big American vee-8 engines, absorb up to 12 h.p. according to figures quoted by some manufacturers.

Cooling

With more attention to aerodynamic design of the front air intake, the cooling fan could be discarded other than for traffic conditions. This is demonstrated by the minute air intakes which the modern racing car like the B.R.M., Vanwall or Lotus requires, in conjunction with a radiator block of small area when compared with those of many production cars.

Two firms, Buick in America and Peugeot in France, already market as optional extras cooling fans in which the drive is disconnected automatically when the water temperature drops below approximately 75-80 deg C. On the former it is brought about by a small hydraulic coupling and on the Peugeot (available on the 403 only) by an electro-magnetic clutch from which the current is disconnected when the water temperature falls below a set minimum.

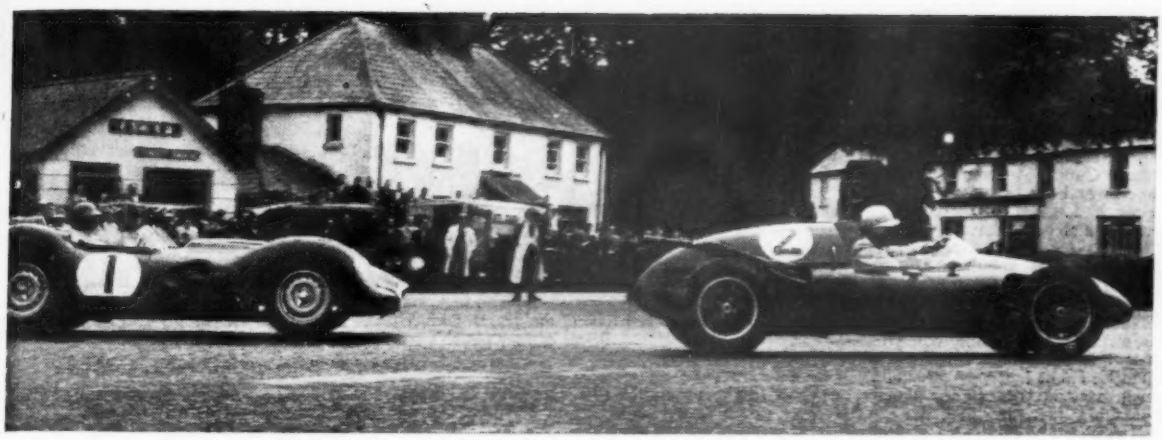
In this country, Kenlowe Accessories, of Middlesex, are marketing a separately mounted, electrically driven coolant fan which switches itself on when the water temperature reaches 90 deg C. and cuts out when this falls to 80 deg C. This, presumably, is the sort of device with which the Lotus Elite will be equipped for road work, for it will be recalled that this car has a ducted radiator with no engine-driven fan.

One other advantage of these fans, which operate only in low-speed traffic conditions, is that they reduce the noise level.

It is quite a difficult problem to design a multi-blade fan to be efficient at low engine speeds and to be quiet at high speeds. On several occasions, when investigating noise problems, I have taken off complete fan assemblies, and have been surprised to find the reduction in noise level which resulted.

Naturally price is a factor when these controllable drives are considered, but I expect to see their use extended, particularly with the possible advent of small air-cooled engines in which the cooling fan absorbs a much greater proportion of the engine's horse-power.

H. M.



J. B. Naylor's 1½-litre Cooper-Climax leads Peter Whitehead's big Lister-Jaguar through Dunboyne—before retiring with a broken chassis frame. Below: Leinster Trophy winner on handicap, J. W. Anstice-Brown with his Austin-Healey Sprite

Leinster Trophy

SUCCESS FOR AUSTIN-HEALEY SPRITE

WET roads hampered the faster cars in the Leinster Trophy race, run on handicap over the new four-mile Dunboyne circuit near Dublin, and scratch man Peter Whitehead (3,442 Lister-Jaguar), who had done a lap at 84.21 m.p.h. in the first night's practising, could not get nearer than 6 m.p.h. slower than this in the race.

The event was run in two 18-lap heats with combined times deciding results, and the winner of the first heat, J. W. Anstice-Brown, provided the new Austin-Healey Sprite with its first race win at the excellent speed of 64.83 m.p.h., with a fastest lap of 67.41 m.p.h., finishing 73sec ahead of John Crosslé (1,172 Crosslé-Ford), who was fastest finisher at 67.87 m.p.h.

In the heat for faster cars, early leader W. D. Lacy, driving his M.G. TD in fine style, was finally overhauled by J. McDonald and D. Acheson (Triumph TR3s), who had given him 30sec start and were duelling spiritedly. Another duel from 90sec farther back was bringing prospects of a very close finish between Bill Bradshaw (1,971 A.C.) and Nigel O'Flaherty (1,498 Porsche Carrera).

Bradshaw took the lead from the start, but the Porsche was never far behind until near the end, when he was twice held up by slower cars and Bradshaw drew away. On the penultimate lap O'Flaherty got clear and went hard after his man; Bradshaw slid wide at the hairpin half-way round the last lap and O'Flaherty got within striking distance. Bradshaw, however, kept in front and headed the Porsche over the line by a second, finishing barely twenty seconds ahead of McDonald, who had disposed of Acheson earlier.

Co-scratchmen Whitehead and Brian Naylor (1,475 Cooper) could not pull back the allowances to the long-markers and concentrated on scratch class honours. Naylor built up a lead of about ten seconds over Whitehead, doing fastest lap of the day at 78.51 m.p.h. on his sixth lap, then had to take to the hedge to get by a spinning, slower car on a fast bend, and damaged the chassis of his Cooper. Whitehead got through and went on to make best speed of the day at 74.67 m.p.h.

RESULTS

Race 1 (18 laps: 72 miles): 1, Austin-Healey Sprite (J. W. Anstice-Brown), handicap 4 laps, 54min 19.6sec, 64.83 m.p.h.; 2, Crossle-Ford (J. Crossle), 3 laps, 55min 32.6sec; 3, Ford Special (D. E. Graham), 3 laps, 56min 22.2sec; 4, M.G. (J. J. Flynn), 3 laps and ½min, 56min 39sec. Fastest lap: Crossle, 70.54 m.p.h.

Race 2 (18 laps): 1, Triumph (J. McDonald), 2 laps and 2min, 55min 21.4sec, 70 m.p.h.; 2, A.C. (W. E. T. Bradshaw), 2 laps and ½min, 55min 41sec; 3, Porsche (N. O'Flaherty), 2 laps and ½min, 55min 42sec; 4, Triumph (D. Acheson), 55 min 55.8sec. Fastest lap: Cooper (B. Naylor), 78.51 m.p.h.

Leinster Trophy handicap (combined results): 1, Anstice-Brown; 2, J. McDonald; 3, J. Crossle; 4, W. E. T. Bradshaw; 5, N. O'Flaherty; 6, D. Acheson.

Over 2,000 c.c. Scratch: Lister-Jaguar (P. N. Whitehead), 74.67 m.p.h.

Under 2,000 c.c. Scratch: Lotus (M. Templeton), 71.75 m.p.h.

Irish 1,172 c.c. Championship

JOHN TURVEY, driving his Lotus-Ford, won the 1,172 c.c. Ford Championship of Ireland race over the Kirkistown airfield course, Co. Down, Northern Ireland, at an average speed of 67.21 m.p.h., but one of the features of the event was the good driving of Ulsterman John Davidson (Ford Special).

A. R. Weshart (Lola Special) was in the lead in the early stages of this 20-lap event, in which there were 11 starters. Then Turvey went in front for a few laps, but Davidson was always lying handy, and when on the twelfth lap the two English visitors spun on a hairpin, Davidson nipped to the front. He held the lead for only five laps, however, for the other two closed and went ahead, Turvey winning.

Feature of the racing was the record-breaking laps by John Pringle, the Bangor driver, in his 1,460 c.c. Cooper-Climax. He took the speed to 75.94 m.p.h. and at the same time ended the long run of successes by Malcolm Templeton in his 1,100 Lotus-Climax. Pringle's average was fastest of the day—74.48 m.p.h.

RESULTS

Ford Championship of Ireland: 1, Lotus-Ford (J. Turvey), 27min 16sec, 67.21 m.p.h. 2, Lola Spl. (A. R. Weshart). 3, Ford Spl. (J. Davidson).

1,991 c.c. Triumph race: 1, J. McDonald, 14min 11sec, 64.61 m.p.h. 2, A. Pollock. 3, D. A. Henderson.

Formule Libre **event:** 1, Cooper-Climax 1,460 (J. R. Pringle), 12min 18.2sec, 74.48 m.p.h. 2, Lotus-Climax 1,100 (M. Templeton). 3, Lotus-Climax 1,100 (J. Slater). Fastest lap (record): J. R. Pringle, 1min 12.4sec.

Saloon car handicap: 1, Riley 1,498 (S. Moore), 16min 6sec (allowance 20sec), 58.43 m.p.h. 2, Riley 1,498 (J. Phillips). 3, Riley (C. Morelli).

Westbrook Hay

HILL CLIMB

EACH year the Westbrook Hay hill climb, organized by the Herts County Automobile and Aero Club, increases both in stature and in the support it receives. Last Saturday's climb was the third to have a national permit. The club was founded in 1903, and the following year organized the first of the celebrated Aston Clinton hill climbs.

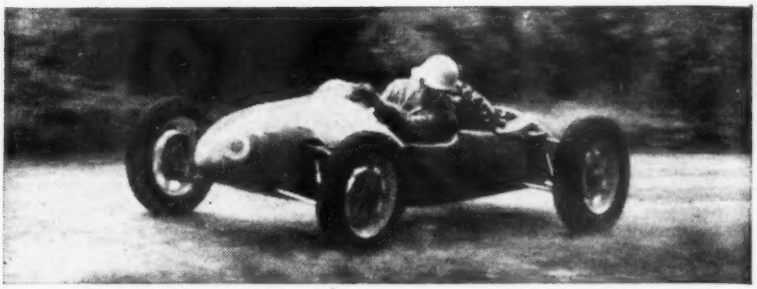
Unlikely to rank either with this famous climb or with Shelsley or Prescott, Westbrook Hay is only 650 yd long, and has one important corner—a slow left-hander about half-way up—followed by a fast bend to the right, actually on the finishing line, for which the quicker cars must be braked. In fact, it is the narrow and rather bumpy drive leading from A41 up among pleasant, wooded slopes to the headquarters of the Hemel Hempstead Development Corporation.

Saturday's climb had 101 entries—a record. Heavy rain limited practice runs in the morning; when the event began, rain had stopped, but the course was still very wet. It was not until after the saloons and sports cars had made their first runs that the surface began really to dry out, helped by some fitful sunshine.

The 1,500 c.c. racing seemed most likely to produce f.t.d., though Tony Marsh, course-record-holder and reigning hill climb champion was, unhappily, a non-starter. D. Boshier-Jones, in his 1,100 c.c. Cooper-J.A.P., alone recorded under 26sec (actually 25.66sec) on the first runs, W. D. Roscoe's blown 1,220 c.c. Cooper-J.A.P. next best with 26.15sec, supercharged cars running in one class higher.

The first climbs of A. F. Rivers-Fletcher and G. H. Keylock, both in 1,100 c.c. Coopers, were not timed. In a re-run, Rivers-Fletcher broke the driving chain soon after the start, and Keylock, after a fast climb, spun on the bend at the finish, clouted a barrier and upset the timing apparatus.

W. F. Moss, in E.R.A. Remus, and D. H. C. Hull, in the ex-Peter Bell, sprint 2-litre E.R.A., were rivals in the unlimited racing class, Hull being faster in both his climbs (26.27sec and 25.86sec), than Moss' 26.62sec and 26.38sec. However, on his second climb F. A. Norris, in the Alta Special, narrowly beat Moss with 26.37sec.



In making fastest time of the day, D. Boshier-Jones in his 1,100 c.c. Cooper-J.A.P. came within 0.4sec of Tony Marsh's course record on his second climb

Racing classes began the second runs, J. B. Welton improving on his first climb to win the 500 c.c. class for Norton-engined machines with his Cooper, while M. M. Cleaver easily headed the corresponding class for J.A.P.-engined cars.

Boshier-Jones' second run was beautifully judged, and it was announced that he had broken the course record with 25.01sec. Unfortunately, this was a mistake and was corrected to 25.09sec, which was nevertheless the fastest climb of the day, though 0.4sec outside Marsh's record.

D. R. Good, also in a Cooper-J.A.P., made a great effort to improve on Boshier-Jones' time and recorded 25.24sec, which was to stand as second fastest. In this class, Rivers-Fletcher, who had worked hard to repair his car, managed 26.28sec on his single timed run, and Keylock climbed in 26.72sec, Roscoe's Cooper-J.A.P. winning this class.

Sidney Allard made a welcome reappearance in hill climbs with a new sports model powered by a 4½-litre air-cooled vee-8 Steyr engine. The frame is tubular and has coil spring and single wishbone front suspension and a de Dion rear axle. The car was rather off colour, his best time being 31.33sec. In this class for unlimited sports cars, E. P. Scragg's H.W.M.-Jaguar with D-type engine was fastest with 26.87sec on his second run, which was also the best by a sports car.

G. H. G. Burton's 4½-litre Bentley which now has a de Dion rear axle—with the blessing of "W. O." himself, it is said—thundered up in 30.08sec. From America, A. Semenov, wearing something resembling a space helmet, recorded 30.42sec in his Jaguar XK 120, while Mrs. Sheila Park climbed in a very creditable 29.71sec in her husband's Tojeiro-AM. DB3S. His own best time was 27.79—second fastest sports car.

PROVISIONAL RESULTS

Fastest time of the day: Cooper-J.A.P. 1.100 (D. Boshier-Jones), 25.09sec.

Fastest time by H.C.A. and A.C. member, and second fastest time of day: Cooper-J.A.P. 1.100 (D. R. Good), 25.24sec. **Lady driver:** Cooper-Norton 500 (Miss P. Brock), 29.08sec.

Saloon cars up to 1.300 c.c.: 1, Fiat 1,089 (W. T. Needham), 39.78sec; 2, Volkswagen 1,192 (M. J. Daniels), 40.53sec. **Over 1.300 c.c.:** Riley 1.489 (R. C. G. Palmer), 37.15sec.

Sports cars up to 950 c.c.: 1, Electron Minor 948 (J. Green), 34.52sec; 2, Electron Minor 948 (T. P. Bennett), 36.22sec; 3, Vanford II 747 (J. H. Heseltine), 38.13sec. **951 c.c. to 1.100 c.c.:** 1, Lotus-Climax 1,098 (J. A. Playford), 29.36sec; 2, Lotus-Climax 1,098 (R. C. Blanshard), 29.47sec. **1.101 c.c. to 1.500 c.c.:** 1, Lotus-Climax 1,490 (E. Lewis), 28.01sec; 2, Lester-M.G. 1,460 (C. B. Harding), 32.73sec. **1,172 c.c. Ford engines only:** Mille-Cent 1,172 (F. J. Tiedeman), 35.04sec. **1.501 c.c. to 2.500 c.c.:** 1, Frazer-Nash 1,971 (J. B. Norris), 29.92sec; 2, Frazer Nash 1,971 (J. R. Rudd), 30.14sec. **Over 2.500 c.c.:** 1, H.W.M. Jaguar 3.442 (E. P. Scragg), 26.87sec; 2, Tojeiro-AM.DB3S 2.922 (A. Park), 27.79sec; 3, Allard Cadillac 5.420 (D. B. Farrell), 29.39sec.

Racing cars up to 500 c.c. (Norton engines only): Cooper-Norton 500 (J. B. Welton), 28.58sec. **Up to 500 c.c. (engines other than Norton):** 1, Cooper-J.A.P. 497 (M. M. Cleaver), 28.85sec; 2, Cooper-J.A.P. 497 (B. Eccles), 29.70sec. **501 c.c. to 1.500 c.c.:** Cooper-J.A.P. 1.100 (D. Boshier-Jones), 25.09sec. **1,501 c.c. to 2.500 c.c.:** Cooper-J.A.P. 1.220 s (W. D. Roscoe), 26.15sec. **Over 2.500 c.c.:** E.R.A. 1.979 s (D. H. C. Hull), 25.86sec.

WET, INTERESTING HORSFALL MEETING

IN last Saturday's St. John Horsfall meeting of the Aston Martin O.C. at Silverstone there was the familiar fine display of young and old Aston Martin and other cars, and there were some spectacular performances on the rain-soaked Club Circuit.

Starting and ending the afternoon's racing were half-hour speed-regularity trials with Le Mans starts, and among the scratch events was a ten-lap race for the United States Air Force trophy, open to cars up to 1,500 c.c. R. H. H. Parnell (son of Reg) whose F2 Cooper won at 72.47 m.p.h., accepted the rare opportunity of a ride in a 1,000 m.p.h. Sabre jet offered to him by Col. R. F. Toliver (C.O. of Westerfield Base), who started the race and presented the award.

Well-calculated handicapping gave special interest, first in the main event of the day—the ten-lap St. John Horsfall trophy event for pre-war Aston Martins, which was won by R. F. McNab-Meredith's 1935 Ulster, and again in the Arthur Bryant Memorial race for David Brown Astons. Here Mrs. Bloxam's DB3S coupé was among the first three cars to start, and soon moved up to first place with J. Dalton and A. G. Whitehead (also in DB3Ss) catching up steadily. The result was in doubt right to the end, and the three cars finished within a few yards of each other, with Mrs. Bloxam first, Dalton second.

R. E. Berry's Jaguar Mark VII somehow found its way into the race for sports cars over 1,500 c.c.; it performed astonishingly well in company with R. Bloxam's H.W.M.-Jaguar and finished well ahead of an XK140 and an XK150. Whitehead led this race from the start.

In the last race, for the *Motor Sport* trophy, a strange mixture of cars assembled at the start. The handicap defeated Dalton, and M. Ward's 1,495 c.c. Aston Martin won at 56.02 m.p.h.

RESULTS (lap distance 1.608 miles)

Handicap races: Bentleys (10 laps): 1, 2.996 (D. McKenzie), 16min 15.2sec, 59.36 m.p.h.; 2, 4.398 (M. J. Bradley); 3, 4.398 (R. H. B. Mason). **Fastest lap:** 4.398 (M. J. Bradley), 66.23 m.p.h. **Elwell-Smith trophy for Aston Martins up to 1.500 c.c. (10 laps):** 1, 1.495 (D. Ewell-Smith), 17min 34.4sec, 59.65 m.p.h.; 2, 1.495 (W. Burton); 3, 1.495 (M. Ward). **Fastest lap:** 1.495 (D. Elwell-Smith), 62.11 m.p.h. **St. John Horsfall trophy for pre-1940 Aston Martins (10 laps):** 1, 1.495 (R. F. McNab-Meredith), 16min 44.8sec, 61.93 m.p.h.; 2, 1.949 (D. W. Chamberlain); 3, 1,495 (M. Ward). **Fastest lap:** 1.949 (D. W. Chamberlain), 65.63 m.p.h. **Arthur Bryant Memorial trophy for David Brown Aston Martins (10 laps):** 1, DB3S 2.992 (Mrs. J. Bloxam), 13min 9.8sec, 74.71 m.p.h.; 2, DB3S 2.992 (J. Dalton); 3, DB3S 2.992 (A. G. Whitehead). **Fastest lap:** DB3S 2.992 (A. G. Whitehead), 83.17 m.p.h. *Motor Sport* **trophy heat (5 laps):** 1, Aston Martin 1,459 (M. Ward), 5min 20sec, 56.02 m.p.h.; 2, Aston Martin 1.500 (R. B. Pounds); 3, Bentley 4.398 (R. H. B. Mason). **Fastest lap:** Aston Martin DB3S 2.992 (J. Dalton), 79.52 m.p.h.

Scratch races: sports cars up to 1.300 c.c. (5 laps): 1, Elva Climax 1,100 (C. Bristow), 6min 56.8sec, 69.44 m.p.h.; 2, Victoria Climax 1,097 (J. C. Brierley); 3, Lotus Eleven 1,098 (D. J. Brough). **Fastest lap:** Elva Climax 1,100 (C. Bristow), 76.76 m.p.h. **Sealed handicap:** Austin 747 (P. A. Cross), 8min 27.8sec, 57.0 m.p.h. **Sports cars up to 1.500 c.c. (5 laps):** 1, Elva Climax 1,100 (C. Bristow), 7min 5.6sec, 68.01 m.p.h.; 2, Lotus Mk. VI (s) 1,172 (K. D. Laverton); 3, Jowett Jupiter 1,486 (A. Thomas). **Fastest lap:** Elva Climax 1,100 (C. Bristow), 76.8 m.p.h. **1,172 formula (5 laps):** 1, Lotus Eleven 1,172 (J. Boshier-Jones), 7min 26.2sec; 2, Lola Special 1,172 (A. R. Wershat); 3, Austin Special 1,172 (A. Mallock). **Fastest lap:** Lola Special 1,172 (A. R. Wershat), 66.39 m.p.h. **Sports cars over 1,500 c.c. (10 laps):** 1, Aston Martin DB3S 2.992 (A. G. Whitehead), 13min 12.4sec, 73.05 m.p.h.; 2, Aston Martin DB3S 2.992 (J. Dalton); 3, H.W.M. Jaguar 3.442 (J. Bekaert). **Fastest lap:** Aston Martin DB3S 2.992 (A. G. Whitehead), 74.22 m.p.h. **United States Air Force trophy for cars up to 1.500 c.c. (10 laps):** 1, Cooper F2 1,475 (R. H. H. Parnell), 13min 18.8sec, 72.47 m.p.h.; 2, Elva Climax 1,100 (C. Bristow); 3, Lotus Eleven 1,098 (B. T. Thomas). **Fastest lap:** Cooper F2 1,475 (R. H. H. Parnell), 74.6 m.p.h.

THE ITALA JUBILEE PARTY

By Gerald Rose

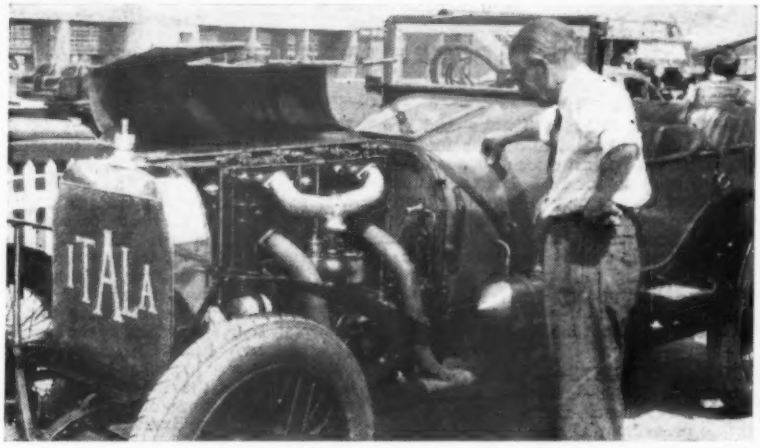
THE great, red, 100 h.p. Itala, now jointly owned by Cecil Clutton and Jack Williamson, is a veteran well known to all motor-racing enthusiasts. It is one of the team of three which made their début in the 1908 Grand Prix at Dieppe, and though it is not now possible to be certain, this particular car is believed to be the one driven by Cagno, who finished eleventh with an average speed of 58.7 m.p.h. over the 477 miles of the course.

Now the Grand Prix of 1908 was held on 7 July, and Clutton and Williamson conceived the happy idea of giving a small party at Silverstone on that date this year in honour of the old racer's Golden Jubilee, and to let her show her best paces once again to admirers. There are not many representatives left nowadays of "the age of monsters" which are still apparently as good as ever, and one felt the Itala was well worthy of the compliment.

So in the bright sunshine of Monday, 7 July, a small party of friends converged at Silverstone in vehicles of every age and description—which goes for the friends, too—and collected in the open space behind the pits on the main straight. The plan was for the Itala to cover 100 kilometres in the hour, Sam Clutton to drive the first eleven laps and Jack Williamson the final ten.

It had become a really hot summer day. Geoffrey Meek retired to one of the pit boxes with a score-sheet, a stop-watch, and two pencils; Sam Clutton and Laurence Pomeroy donned crash helmets, climbed into the Itala and set off round the short circuit for the flying start. The guests mostly lined the roof over the pit boxes, and watched for the regular reappearance of the old car, at the end of the straight. And regular it certainly was, as the fastest of Sam's laps was 2min 46.4sec (62.2 m.p.h.) and the slowest 2min 48.2sec (62.3 m.p.h.).

As Sam came round for the tenth time a board was held out to warn him to pull up at the end of the lap—a board carrying a large drawing of a pot of beer complete with froth, which seemed to me to be in harmony with the whole spirit of the enterprise. Clutton and Pomeroy got out, Jack Williamson and Jim Abbott got in and off went the old Itala again to complete her task.



Gerald Rose, renowned chronicler of the Heroic Age of motor racing, renews acquaintance with the 1908 G.P. Itala. Fifty years ago he saw it raced at Dieppe and reported for The Autocar

Alas, in the thirteenth lap her mind must have been on Dieppe, as she shed a tyre at the back of the circuit—I like to feel it was just to remind us that it was tyre troubles that dominated that 1908 race throughout. A fresh tyre was soon fitted, but too much time was lost to make it worth while completing the other eight laps. So the Itala was brought round to the pits again, and the time until luncheon filled in with joy-rides with a variety of drivers.

I had a couple of laps behind John Bolster (in an iridescent deer-stalker) and was very glad I did, as it made me realize how useless a small circuit like Silverstone can be to demonstrate the power, speed, and condition of an old racing car like the Itala. These ex-aerodrome race-tracks are, of course, well suited to the modern car with its low centre of gravity, ultra-rapid acceleration and powerful brakes. With nine bends in less than 3 miles, however, there was not one piece of straight on which the Itala could be really let out—one could feel the great engine just getting into its stride as the brakes had to go on again.

Re-reading the reports on the Dieppe race that I wrote for *The Autocar* in 1908, I see I said "Looking back on the circuit, the general impression one carries away is that of its immense speed possibilities. Endless straights seem to rise before one's eyes, broad and open. Sometimes flat, more often undulating, one feels that there are very few places where cars cannot go all out." So that for the Itala to average almost exactly 62 m.p.h. over twelve laps of such an unsuitable circuit as Silverstone is really a most remarkable performance, which reflects very great credit on those who own and cherish her now.

The popping of champagne corks opened the final stage in the proceedings; lunch, a few brief speeches in honour of the old car and of the generous thought which led to organizing the event, and the Itala's most enjoyable party was over.

I think the old lady can be proud of her party and her performance, and I now look forward to her Diamond Jubilee in 1968. And if I am not here to record it, I trust that whoever does so will possess the same feeling of respect and admiration as I have always had for the "monsters" of the good old days.

Goodwood

THE opening event of this first-class meeting (ten laps, unsupercharged cars up to 1,250 c.c.) was won by Mike Taylor's Lotus at the highest average speed yet achieved at a B.A.R.C. members' meeting; and the fastest average ever by a car of under 1,100 c.c. at Goodwood—regardless of the type of meeting; the winner's race average was 87.70 m.p.h. The fastest laps in this race (set up jointly by the Lotuses of Taylor and Keith Greene in 1min 37.2sec—88.89 m.p.h.) equal the record for 1,100 c.c. sports cars. Taylor again equalled this lap time in the five-lap 1,500 c.c. event.

The 1,250 c.c. event was intensely exciting, with Greene never more than one second behind Taylor; at least on two occasions he was alongside; they finished a length apart. In the 1,500 c.c. event, Greene did not challenge Taylor quite so hard, and finished three seconds behind. Best battle was between Chris Martyn (1,100 c.c. Lotus) and Shale, in Max Trimble's single-cam 1,500 c.c. Lotus; Martyn nipped past on the last lap and took third place by one-fifth of a second. Shale walked away with the "Marque" race, leading for all but the first few hundred yards of the ten laps.

Paul Fletcher's A.C. caught fire when it was lying second: the driver did not notice the flames for half a lap—by which time the rear of the car was quite badly damaged . . . so was Arundell's Lotus when he spun off at Madgwick on the first lap of the 1,500 c.c. race. Handicapping reached a high standard—particularly in the event for small saloon cars, which went round on the last lap looking almost like a train of railway coaches.

The "no spinning" rule applied to B.A.R.C. members' meetings prevented Hunt's Jaguar from winning its race, and Morgan's Lotus-Ford Consul from taking fourth place in another event.

RESULTS

10-lap Scratch Race: 1, Lotus Climax (M. Taylor), 16min 25.2sec, 87.70 m.p.h.; 2, Lotus Climax (K. A. Greene), 16min 25.4sec; 3, Lotus Climax (P. J. Arundell), 16min 51.8sec. Fastest lap: M. Taylor and K. A. Greene, 1min 37.2sec, 88.89 m.p.h.

5-lap Handicap Race: 1, Austin A.35 (G. Lawrence), 12min 9.0sec, 64.10 m.p.h.; 2, Austin A.35 (G. H. Gaston), 12min 12.4sec; 3, D.K.W. (J. M. Sparrowe), 12min 14.4sec.

10-lap Marque Scratch Race: 1, Austin-Healey 100-6 (D. S. Shale), 19min 8.0sec, 75.26 m.p.h.; 2, Triumph TR2 (R. F. North), 19min 47sec; 3, Triumph TR2 (J. A. G. Ewer), 19min 47.6sec. Fastest lap: D. S. Shale, 1min 51sec, 77.84 m.p.h.

5-lap Handicap Race: 1, Jaguar XK120 (W. P. Sheppard), 10min 51sec, 70.70 m.p.h.; 2, Ford Zephyr (E. W. Cuff Miller), 10min 54sec; 3, Jaguar 3.4 (D. J. Uren), 11min 0.4sec. Fastest lap: A.C. Aceca (R. A. Brightman), 1min 53.2sec, 76.32 m.p.h.

5-lap Scratch Race: 1, Lotus Climax (M. Taylor), 8min 13.6sec, 87.52 m.p.h.; 2, Lotus Climax (K. A. Greene), 8min 16.8sec; 3, Lotus Climax (S. C. S. Martyn), 8min 34.6sec. Fastest lap: M. Taylor, 1min 37.2sec, 88.89 m.p.h.

5-lap Handicap Race: 1, Lotus Climax (H. J. Fredman), 10min 30sec, 76.87 m.p.h.; 2, A.C. Ace (F. O. Munns), 10min 35.2sec; 3, M.G. A (J. A. P. Trafford), 10min 35.4sec.

5-lap Handicap Race: 1, Lotus Climax (D. Shale), 9min 44.2sec, 83.21 m.p.h.; 2, Aston Martin DB2/4 (I. M. Gillett), 9min 51.8sec; 3, Lotus Ford (J. A. Derisley), 9min 56.4sec. Fastest lap: D. Shale, 1min 41.0sec, 85.54 m.p.h.

5-lap Handicap Race: 1, Cooper Zephyr (C. J. Steele), 11min 41.6sec, 71.81 m.p.h.; 2, M.G. A (E. O. Kine), 11min 45.4sec; 3, Triumph TR3 (K. Y. Twisk), 12min 6.0sec. Fastest lap: Triumph TR2 (J. C. Quick), 1min 54sec, 75.79 m.p.h.

The Sport

By PETER GARNIER

FERRARI PLANS
VILA REAL
LONDON RALLY

WITH THE Tourist Trophy and the Venezuelan G.P. still to come before the Sports Car Championship qualifying events are over for 1958, Ferrari has decided not to take part in any more sports car races—preferring to concentrate on Grand Prix races. With the Sports Car Championship already securely in the bag—and nothing to lose—this decision is not really surprising.

Ferrari's plans for next season, he says, will be worked out in October.

SIX BERKELEYS—three of 492 c.c. and three of 328—have been entered for the Liège-Brescia-Liège Rally, which takes place from 17 to 20 July; they are, in fact, the only British entries in this rally for miniature cars. Drivers of the bigger cars will be: Tony Wheeler and M. Murland; A. Jamieson and D. J. Farley; Henk van Zalinge and W. L. Poll (who are the Dutch distributors for the marque). The smaller cars will be driven by H. Fenton and H. Loudon-Cox; A. C. Westwood and Robin Richards; Pat Moss and Ann Wisdom—who journeyed straight up to Liège as soon as they had finished the Alpine. The cars were flown over by Silver City last Tuesday.

REGULATIONS FOR the Portuguese Grand Prix—which this year counts for the World Championship—have arrived. The race will be run over 50 laps of the 7.407 km (4.60 miles) Circuit of Oporto; this gives a total distance of 230.0 miles (370.35 km). The lap record for the circuit stands at 94.82 m.p.h., so that—unless the race speed rises miraculously to 115 m.p.h.—the duration will be at least two hours, thereby complying with the F.I.A.'s 300 km *and* 2hr duration stipulated for a World Championship event (unlike a certain much-discussed *grande épreuve* held recently that didn't).

The race will be run in an anti-clockwise direction The circuit is "around the houses" in Oporto, on the Douro River in the northern part of Portugal; it is divided more-or-less equally into a very fast straight and a very tricky backleg on which there is an unending succession of bends, which last for nearly three miles and which are bounded by trees—making it very unwise to run out of road on this particular section. Like Monte Carlo, most of the circuit is accessible to spectators. The race is for formula 1 alone; the regulations make no mention of formula 2.

The date is 24 August; practice will be held on 22 and 23 August. Entries close on 31 July at midnight. Organizers are the Automovel Club of Portugal, 24 Rua Rosa Araujo, Lisbon—or 2 Rua Goncalo Cristovao, Oporto.

IN THE LIST of forthcoming events counting for *The Autocar* Formula 2 Championship, published in last week's issue, the Snetterton M.R.C.'s Vanwall Trophy meeting on 27 July was omitted. The formula 2 race at this meeting will, of course, count towards the Championship—as do all formula 2 races included at meetings of not less than National, National Open or International status, if they are of not less than 24 miles.

VERY KEEN to have a drive in the British G.P. at Silverstone tomorrow, one-time Indianapolis winner, Troy Ruttman, who drove a Centro-Sud Maserati in the French G.P., is over in this country and has been to see John Eason Gibson at the B.R.D.C. headquarters. Whether he will succeed or not remains to be seen; what is even more interesting, however, is whether or not this is the beginning of a move towards European-style road racing by the Indianapolis drivers. After all, several of our drivers have now had a go—and not without success—at the Indianapolis type of event held at Monza, and what with the proposal to hold a Grand Prix at Sebring next year. . . .

COUNTING TOWARDS the Drivers' Championship for the first time last year—and won by Moss' Vanwall—the Pescara Grand Prix is unlikely to be held this year because of a lack of funds.

WHILE MOSS, P., was busy winning the Coupe des Dames in the Alpine Rally (together with Ann Wisdom), Moss, S., was away in Portugal, winning (with Maserati) the 3-litre class and the general classification at Vila Real last Sunday. The race was run over 35 laps (150.5 miles), and until Moss finally took the lead on the 28th lap, he and Jean Behra (Maserati) exchanged first place no fewer than twelve times; during this contest, Moss set up a new lap record at 88.28 m.p.h.

In third place was another Maserati, driven by Godia Sales, and Campbell (Lotus), Piper (Lotus) and Mena (Ferrari) finished fourth, fifth and sixth—Campbell (33 laps) and Piper (33 laps) finishing first and second in the 1½-litre class. Five of the 16 starters retired, and the race times of the three leaders were: Moss, 1hr 47min 20.38sec; Behra, 1hr 47min 21.78sec; Sales, 1hr 47min 36.41sec.

Now, incidentally, S. Moss leads the Drivers' Championship—jointly with Mike Hawthorn—and P. Moss leads the Womens' European Touring Championship (jointly with Ann Wisdom; the rules say: "Whenever two persons have constantly formed the same team throughout all the competitions which have determined their classification, they shall be declared Champions jointly").

"BOB" WRIGHT—R. H. Wright, O.B.E.—who died last week-end, was chief timekeeper of the B.R.D.C. His experience at the job was tremendous, his first official appointment as a timekeeper being in Ireland in 1913. In the B.R.D.C. Silver Jubilee Book he explains how his appointment came about: "Wright has a watch with a centre second hand. He'll do it," they said, "they" being the committee of the local motor cycle club. After that he took charge of timekeeping at all Irish events.

His association with the late A. V. Ebblewhite began in 1928 with the first of the R.A.C.'s Tourist Trophy races at the Ards Circuit, and lasted until "Ebby's" death in 1939. The latter, not given to handing out bouquets, said that Wright's staff of timekeepers in Ireland was unequalled. After the war he became chief timekeeper to the B.R.D.C., and took charge at every major Silverstone meeting, and all the Empire Trophy races.

REGULATIONS for the popular and well-run London Rally (19-20 September) are now available; starting points will be London, Leeds and Taunton, with the finish at the Royal Ascot Hotel, Ascot. There are separate awards for experts and novices, the experts being required to cover a night navigation section of 175 miles at an average of 30 m.p.h., and the novices being let off easily with 110 miles at 25.75 m.p.h. The total road section is of 650 miles including "interesting and exciting routes in the Welsh mountains."

This ex-Dorothy Paget, long-wheelbase 4½-litre "blower" Bentley—now owned by Harry Rose—won the award for the best turned-out car at the Bentley D.C. rally at the Montagu Motor Museum

CLUB NEWS

London M.C.—In the Horley driving test meeting on 6 July, 28 starters were each required to complete seven tests. The results were as follows:—

Overall and Class A: 1, M. and L. Spl. (M. Lawson), 154.8; 2, Cannon Spl. (R. Chappell), 164.8; 3, Cannon Spl. (M. R. B. Cannon), 168.5. **Class C:** 1, Standard (H. R. Braithwaite), 193.5; 2, Volkswagen (P. S. Thomas), 2041.1. **Class D:** 1, Aston Martin (D. H. Perring), 207.3; 2, Ford (M. Godber), 269.0.

East Anglian M.C.—The results of the sprint meeting held at Snetterton on 6 July were as follows:—

Best time of day: D type Jaguar (Major I. B. Baillie), 50.6 sec. **Class A: Fiat** Abarth (R. M. Shepherd-Barron), 63.5. **Class B:** Riley 1.5 (N. S. Morley), 62.8. **Class C/D:** Jaguar 2.4 (N. S. Morley), 60.7. **Class E:** Fiat Abarth (R. M. Shepherd-Barron), 62.7. **Class F:** Riley Merlin (R. V. C. Hardman), 55.8. **Class G:** Triumph TR3 (L. J. Coe), 53.4. **Class H:** Allard (D. B. Farrell), 52.9. **Class J:** Lotus Mk. VII (B. R. Hart), 56.3. **Class K:** D type Jaguar (Major I. B. Baillie). **Best lady driver:** Allard (Mrs. S. Farrell), 52.9sec.

West Essex C.C.—The results of the Three Jolly Wheelers rally held on 28-29 June were as follows:—

Outright winner: M.G. Magnette (R. Ager), 230 marks lost. **Class A1,** Expert: Ford (A. Elliott), 300. **Class A2, Novice:** Wolseley 4/44 (B. Bishop), 990. **Classes B1 and B2:** Sunbeam Mk. III (L. Chamberlain), 650. **Classes C1 and C2:** Morgan (R. Davies), 1,120. **Team Award:** Elliot, Doney and Gough.

Oxford M.C.—The results of the driving tests held on 6 July at Oxford Airport, Kidlington, were as follows:—

Outright winner: Triumph TR3 (P. J. R. Prior), 242.2 penalty points. **Class A:** 1, Chandler Spl. (M. Tyler), 242.5; 2, Hillman (W. T. Alden), 297.7. **Class B:** 1, Morris Minor 1000 (M. Lord), 257; 2, Ford Anglia (J. Huggins), 265.5. **Class C:** 1, Triumph TR2 (E. O. Goodman), 254.2; 2, Triumph TR2 (Mrs. M. Goodman), 280.2. **Class D:** Vauxhall Velox (J. Stewart-Wood), 316. **Ladies' Prize:** Triumph TR2 (Mrs. M. Goodman).

Ecurie Ecosse Association.—A meeting of the Midland Branch will be held at the Saxon Mill, Guy's Cliffe, Warwick, on 21 July, at 8.30 p.m. Jack Fairman will be giving a talk and he, Ivor Bueb and David Murray will answer questions. An invitation is extended to all non-members interested in motor racing.

750 M.C.—The telephone number of the Chief Marshal, Les Needham, for the meeting at Silverstone on 16 August, is Colindale 3633, and not 2633 as stated in the regulations.

Berwick and District M.C.—The results of the gymkhana held on Sunday, 22 June, were as follows:—

1, M.G. A (G. T. Gibson); 2, Triumph TR3 (F. Buglas); 3, Land-Rover (J. Sutherland); 4, Morris Minor (C. D. Patterson); 5, Hillman (J. C. Rutherford); 6, Sunbeam Rapier (A. Cowan).

Rugby M.C.—A gymkhana was held at Wellesbourne Mountford Airfield on Saturday, 28 June, and the results were as follows:—

Class 1: 1, Dellow (V. Saunders); 2, Morris Minor 1000 (E. G. M. Crews); 3, Riley 1.5 (P. Galliford). **Class 2:** 1, Ford special (A. E. Nye); 2, Austin-Healey (D. Underwood); 3, Morris 8 (B. Boardman).

M.G. C.C. (N.W. Centre).—The results of the rally held on Sunday, 15 June, were as follows:—

1, M.G. TC (P. T. Moss); 2, Morris Minor (A. H. Collinson); 3, M.G. TD (R. Jones).

The results of the June driving tests held at Old Trafford, Manchester, on Sunday, 29 June, were as follows:—

Class 1: 1, Morris Minor (A. H. Collinson); 2, Austin A.35 (R. Kenshole). **Class 2:** 1, Ford Prefect (A. C. Whatmough); 2, Ford Anglia (J. D. Irlam). **Class 2, Open:** 1, M.G. TF (A. Royle); 2, M.G. A (P. W. D. Smith). **Class 3, Closed:** Ford Consul (K. Armstrong); 2, Vauxhall Victor (W. Crompton). **Class 3, Open:** 1, Triumph TR3 (R. Grant); 2, Triumph TR2 (J. H. Taylor). **Ladies' Award:** Ford Prefect (Mrs. J. Whatmough); **Team Award:** Riley 1.5 (J. H. Brooks), M.G. A (P. W. D. Smith), M.G. A (A. Lees-Jones).

Hagley and District L.C.C. and **S.U.N.-B.A.C.**—The Hagley versus Sunbac driving test competition was held on 29 June at the Vono works, Tipton. The 49 entrants each had to complete six tests and the Hagley club were the winners. The results were as follows:—

Super Sports Cars: 1, TMS1 (A. E. Marsh), 167.8sec; 2, Ford (P. G. Cooper), 170.2; 3, TMS2 (J. D. Hollingworth), 171.2. **Sports cars:** 1, Berkeley (I. Mantle), 170.2; 2, Morgan (J. F. Livingston), 170.8; 3, Triumph TR2 (T. D. Warren), 171.4; 4, Triumph TR2 (B. B. Jones), 178.2. **Saloon cars:** 1, Renault Dauphine (F. D. Woodhall), 188.4; 2, Standard (J. F. Livingston), 191.0; 3, Ford Anglia (J. H. Dorsett), 192.8; 4, Austin (J. J. Hill), 193.0. **Ladies award:** Morgan (Mrs. P. E. Livingston), 196.6. **Novice award:** Triumph TR2 (G. Broughton), 183.4.

Oswestry and District M.C.—The results of the driving test meeting held at Rednal Airfield, Oswestry, on 13 July, were as follows:—

Club Positions: 1, Oswestry and District M.C., average 223 marks; 2, Severn Valley M.C., 226.6; 3, Ellesmere and District M.C., 239.6. **Premier Award (tie):** Triumph TR3 (K. Power) and Austin A.105 (J. Casewell), 200 marks. **Individual team awards:** Oswestry—Austin A.30 (J. Gittins), 201 Ellesmere—Renault Dauphine (P. Foulkes), 208; Severn Valley—Sunbeam Rapier (D. J. Hampson), 217.

Peterborough M.C.—The Annual Banks Trophy rally was held on 13 July. Thirty-four competitors took part and the rally was divided into two sections with driving tests during the tea break. The final results were as follows:—

Banks Trophy: Ford Thames (G. Adams and W. R. Hastings); **First Class Awards:** Ford Zephyr (C. Armstrong) and M.G. (V. J. Rowe). **Second Class Award:** Singer Gazelle (D. Firman); **Novice Award:** Standard 10 (S. J. Beaumont). **Team Award:** Wolseley 1500 (J. Bradshaw), Ford Anglia (J. M. Battle) and Ford Prefect (T. Stevenson).

COMING SHORTLY

JULY 19.—British Grand Prix, Silverstone.
19-20.—Bristol M.C. and L.C.C., Summer rally, Mercury café on A35, 11 p.m.
19-20.—Thames Estuary A.C., Southend 300 rally, Southend, Ipswich and London, 7.30 p.m. onwards.
20.—Caen Grand Prix, France.
20.—B.A.R.C., driving tests, Ovingdean, near Brighton, 11.30 a.m.
20.—Wolverhampton and South Staffs C.C., Gymkhana, Pendeford Airport, Fordhouses, Wolverhampton, 2.30 p.m.
20.—Falcon M.C., Inter-club autocross, near Walkern, near Stevenage, Hertfordshire, 2.30 p.m.
20.—Birmingham Y.C.M.C., driving tests, Walsall Airport, 2.30 p.m.
24.—Jersey M.C. and L.C.C., National speed hill climb, Bouley Bey, 2.30 p.m.
26.—Mid-Cheshire M.C., race meeting, Oulton Park, 1 p.m.
26.—B.A.R.C., members' meeting, Aintree, 2 p.m.
26-27.—Sussex C. and M.C.C., Eleven-Seven Rally, near Pulborough, Sussex, 8.31 p.m.
26-27.—West Hants and Dorset C.C., Graham Cup night trial.
27.—Bari Grand Prix, Italy.
27.—Herts County A. and A.C., speed trials, Brands Hatch, 2 p.m.
27.—Forces M.C., Bordon driving tests, 2.30 p.m.
27.—Bugatti O.C., Inter-club invitation speed hill climb, Prescott, 10.30 a.m.
AUGUST 3.—German Grand Prix, Nurburgring.

RACE AND RALLY REGULATIONS RECEIVED

West Essex C.C.—National Benzole Trophy race meeting, 9 August, Snetterton Circuit, near Thetford. Races for sports and saloon cars, and Vintage sports cars manufactured prior to 1931. Entries (fee £2 2s per entry) to J. Trimble, c/o 160 Hermon Hill, South Woodford, London, E.18 by 2 August. Maximum number of entries 150.

East Anglian M.C.—Restricted Autocross, Sunday 17 August, Wolves Hall, Tendring, Nr. Colchester, at 2 p.m. Classes for saloon, convertible, sports and grand touring cars. Regulations available from D. G. Last, 25 Bramley Close, Colchester. Entry fee £1 5s.

West Cornwall M.C.—Speed hill climb, 4 August, Trengwainton, Madron, near Penzance. Fifteen classes for motor cycles, sports, vintage, racing and trials type cars. Entries to B. L. Ellis, 7 Merlin Place, Mousehole, Penzance, by 28 July, fee 10s per class.

Mid-Thames C.C.—Restricted night rally, 11-12 October, over a course of 250 miles. This rally is for teams of cars competing for the South Eastern Shield. Any club may enter and Club Secretaries should contact A. E. Hunt, 2 Norcutt Road, Twickenham, Middlesex.

Volvo cars, awaiting shipment, are in collapsible crates which hold two cars and can be quickly dismantled for the return journey. R. and H. Wale (Joinery), Ltd., Gamlingay, Sandy, Beds, have been appointed sole agents in this country for this Swedish invention

Trade and Industry

Mr. John Griffiths, M.B.E., has been appointed to the board of directors of J. Coryton, Ltd., 102, Sidney Street, Chelsea.

Harold Radford and Co., Ltd., who are official retailers for Rover, Jaguar, the Rootes Group and Ford, have now been appointed official retailers of Vauxhall and Bedford.

A new Dunlop sub-depot has been opened in King Edward Street, Grimsby. The manager is Mr. C. J. Whitbread, and the depot, which was designed by the company's architect, Mr. Stuart Bentley, F.R.I.B.A., has a storage space of 70,000 cu ft.

A further inertia test plant for Girling, Ltd., is to be designed by Heenan and Froude, Ltd., of Worcester. The dynamometer plant, which is for the testing of Girling brakes, consists basically of a heavy flywheel accelerated by an electric motor. Brakes can be tested either by application direct to the dynamometer, or to a vehicle on rollers, coupled to it.

Thirty B.M.C. apprentices left this country recently on an 18-day tour of Belgium, Germany and Holland. The party, led by Mr. Eric Date, of the Austin Motor Company, and Mr. E. John Cox, of Morris Motors, planned to visit the Brussels World Fair, the Auto-Union factory at Dusseldorf and the Continental tyre works at Hanover, among other places of interest.

The death is recorded with regret of Mr. A. R. Harper, a director of Harper's Modern Motors, Blackheath, Worcestershire.

Mr. M. Mothio has been appointed sales manager of the London division of Shell-Mex and B.P., Ltd. He succeeds Mr. C. S. Martin, who becomes manager of the company's north-western division.

Requests for larger manufacturing tolerances relating to keys and keyways have resulted in a revised edition of B.S.46 Part 1, 1958, copies of which may be obtained from the British Standards Institution, Sales Branch, 2, Park Street, London, W.1, price 7s 6d, plus postage to non-subscribers.

Information Sought

Correspondence, addressed c/o *The Autocar*, can be forwarded on behalf of readers seeking the following handbooks and information:

No. 17446. 1923 Citroen 7.5 h.p. Roadster.
"B.A.J."—All possible information and a handbook.

No. 17447. Back Numbers Required.
"L.D.R."—Issues of *The Autocar* prior to 1956. American M.G. Magnette owner would like to correspond with British M.G. enthusiast.

No. 17448. Abarth Fiat 600 Conversion.
"R.S."—All possible information and experiences as to reliability and what snags to look for. Also details of experiments carried out on soundproofing underneath and the car interior.

No. 17449. Handbooks Required.
"J.D.H."—1939 Series E Morris Eight workshop manual.
"C.W."—1935 11.4 h.p. Citroen.

NEW CAR PRICES

	U.K. List Price · With Tax		
A.C.	£	s	d
Ace	1,188	0	0
Ace-Bristol	1,443	0	0
Aceca	1,446	0	0
Aceca-Bristol	1,700	0	0
ALFA ROMEO			
Giulietta	1,678	0	0
Giulietta TI	1,395	0	0
Giulietta Veloce	1,798	0	0
1900 Super	1,665	0	0
Super Sprint	2,250	0	0
ALLARD			
Palm Beach (Ford)	1,050	0	0
Palm Beach (Jaguar)	1,300	0	0
Gran Turismo	1,700	0	0
ALVIS			
Sports saloon 3-litre	1,995	0	0
Convertible	2,195	0	0
AMBASSADOR			
Super 4-door	1,630	0	0
Estate car	1,725	0	0
Custom 4-door	1,700	0	0
Country estate car	1,795	0	0
ARMSTRONG SIDDELEY			
Sapphire 346	1,100	0	0
(automatic)	1,195	0	0
Limousine	1,910	0	0
(automatic)	2,099	0	0
ASTON MARTIN			
DB Mk. III	2,050	0	0
Drop-head Coupé	2,300	0	0
ASTRA			
Utility	308	0	0
AUSTIN			
A.35 2-door	379	0	0
2-door de luxe	387	15	0
A.35 4-door	396	10	0
4-door de luxe	400	0	0
Countryman	444	0	0
A.55 Cambridge	538	0	0
A.55 *de luxe*	570	0	0
A.95 Westminster	689	0	0
A.95 *de luxe*	719	0	0
Countryman	834	0	0
A.105	823	0	0
(automatic)	885	10	0
Vanden Plas	982	10	0
(automatic)	1,045	0	0
Gipsy	650	0	0
(diesel)	755	0	0
AUSTIN-HEALEY			
Sprite	445	0	0
100-Six	817	0	0
BENTLEY			
Series S	3,695	0	0
L.W.B.	4,595	0	0
Freestone and Webb	5,187	0	0
Hooper	4,990	0	0
H. J. Mulliner	5,455	0	0
James Young	4,915	0	0
Continental			
H. J. Mulliner	5,275	0	0
Four door	5,355	0	0
Park Ward	4,995	0	0
BERKELEY			
Two-seater 328 c.c.	332	7	6
492 c.c.	381	15	4
Hardtop	397	14	7
B.M.W.			
501 2.6	1,638	0	0
502 2.6	1,792	0	0
502 3.2	1,970	0	0
502S 3.2	2,165	0	0
503	3,500	0	0
BORGWARD			
Isabella	830	0	0
Combi estate car	880	0	0
Touring sport	950	0	0
TS coupé	1,330	0	0
BRISTOL			
405	2,390	0	0
Convertible	2,450	0	0
BUICK			
63 Century	2,175	0	0
CADILLAC			
6309 Fleetwood	3,425	0	0
6239D sedan de ville	3,125	0	0
CHEVROLET			
Bel-Air	1,410	0	0
Sport	1,440	0	0
Convertible	1,555	0	0
Nomad estate car	1,500	0	0
Corvette	1,906	0	0
CHRYSLER			
300C	2,740	0	0
Convertible	2,960	0	0
Imperial	2,885	0	0
Crown	3,045	0	0
CITROEN			
2 c.v.	398	0	0
1D19	998	0	0
DS19	1,150	0	0
DAIMLER			
One-O-Four	1,595	15	4
Majestic	1,662	8	8
DK400A	2,795	15	4
DK400B	2,875	15	4
Hooper limousine	4,385	0	0

	U.K. List Price · With Tax		
D.B.	£	s	d
Rally HBR5	1,299	2	0
DELLOW			
Mark VI	575	0	0
Mark VI sports	625	0	0
D.K.W.			
Fixed-head coupé	765	0	0
Four-door saloon	798	0	0
Universal estate car	830	0	0
1000 fixed-head coupé	850	0	0
DODGE			
Custom Royal	2,040	0	0
EDSEL			
Pacer	1,635	0	0
Corsair	1,991	0	0
Citation hardtop	2,100	10	0
FACEL VEGA			
FVS hardtop	3,150	0	0
(automatic)	2,980	0	0
FAIRTHORPE			
Atomota	426	0	0
Electron Minor	479	0	0
Electron Mk. II	769	0	0
FIAT			
500 *de luxe*	370	0	0
600	432	0	0
Convertible	452	0	0
Multipla 4/5	532	0	0
Multipla 6	540	0	0
1100	578	10	0
1200 *Full Light*	798	10	0
1400B	774	0	0
1900B	980	0	0
1900B *Full Light*	1,385	0	0
FORD			
Popular	295	0	0
Anglia	380	0	0
Anglia de luxe	400	0	0
Prefect	415	0	0
Prefect de luxe	438	0	0
Escort	434	0	0
Squire	463	0	0
Consul	545	0	0
Consul de luxe	580	0	0
Convertible	660	0	0
Estate car	760	0	0
Zephyr	610	0	0
(automatic)	725	0	0
Convertible	778	0	0
Estate car	825	0	0
Zodiac	675	0	0
(automatic)	790	0	0
Convertible	873	0	0
Estate car	895	0	0
FORD (American)			
Thunderbird hardtop	2,133	10	0
FORD (Canadian)			
Custom 300	1,307	0	0
Fairlane 500 Town	1,377	0	0
500 *Town Victoria*	1,409	0	0
Ranch Wagon	1,362	0	0
FORD (Germany)			
12M	702	0	0
15M	763	0	0
FRAZER NASH			
Sebring and G.T.	2,500	0	0
GOGGOMOBIL			
T.300	329	0	0
T.400	342	6	0
TS.300	416	0	0
Convertible	458	0	0
TS.400	428	13	4
Convertible	471	0	0
HILLMAN			
Minx Special	498	0	0
Minx de luxe	529	0	0
Convertible	598	0	0
Estate car	625	0	0
Husky	465	0	0
HUMBER			
Hawk	840	0	0
(automatic)	955	0	0
Estate car	975	0	0
Touring limousine	920	0	0
ISETTA (Gt. Britain)			
300	232	8	5
600	319	0	0
JAGUAR			
2.4	996	0	0
Special equip. model	1,019	0	0
3.4	1,114	0	0
XK150 hardtop	1,175	0	0
(automatic)	1,303	0	0
Special equip. model	1,292	0	0
Convertible	1,195	0	0
Roadster	Export only		
Mark VIII	1,219	0	0
(automatic)	1,331	0	0
JENSEN			
541	1,435	0	0
541 *de luxe*	1,750	0	0
541 R	1,910	0	0
Interceptor	1,800	0	0
LANCIA			
Appia Series II	1,125	0	0
Aurelia Gran Turismo	2,230	0	0
Flaminia	2,500	0	0

(*Continued overleaf*)

NEW CAR PRICES

	U.K. List Price · With Tax					
LINCOLN	£	s	d	£	s	d
Capri	2,600	0	0	3,901	7	0
Première	2,869	10	0	4,305	12	0
Continental hardtop	3,142	10	0	4,715	2	0
LLOYD						
LP600	390	0	0	586	7	0
LC600 Cabrio	427	0	0	641	17	0
LS600 Combi	405	0	0	608	17	0
LOTUS						
Seven	690	0	0	1,036	7	0
Elite	1,300	0	0	1,951	7	0
Sports	1,021	0	0	1,511	2	0
Club	1,309	0	0	1,937	7	0
Le Mans 75	1,625	0	0	2,405	4	0
MEADOWS						
Frisky	299	0	0	449	17	0
Friskysport	322	0	0	484	7	0
MERCEDES-BENZ						
180	1,195	0	0	1,793	17	0
180D (diesel)	1,295	0	0	1,889	17	0
190	1,250	0	0	1,876	7	0
190SL	1,930	0	0	2,896	7	0
219	1,430	0	0	2,146	7	0
220S	1,595	0	0	2,393	17	0
300 (automatic)	2,600	0	0	5,401	7	0
300SL Roadster	3,750	0	0	5,626	7	0
MERCURY (American)						
Medalist	1,503	0	0	2,255	17	0
Monterey	1,561	10	0	2,343	10	0
Montclair	1,888	0	0	2,833	7	0
Parklane	2,224	10	0	3,368	2	0
Commuter estate car	1,778	0	0	2,668	7	0
MERCURY (Canadian)						
Monterey	1,481	0	0	2,222	17	0
Phaeton	1,640	0	0	2,461	7	0
Montclair	1,716	0	0	2,575	7	0
Phaeton	1,765	0	0	2,648	17	0
METROPOLITAN						
Hardtop	498	10	0	749	2	0
Convertible	516	0	0	775	7	0
M.G.						
MGA	663	0	0	995	17	0
Hardtop	724	0	0	1,087	7	0
Magnette	714	0	0	1,072	7	0
MORGAN						
4/4 Series II	498	0	0	748	7	0
Competition	550	0	0	826	7	0
Plus 4 (TR) 2-seater	645	0	0	968	17	0
Convertible	693	0	0	1,040	17	0
Plus 4 (Vanguard)	594	0	0	892	7	0
Convertible	641	0	0	962	17	0
MORRIS						
Minor 1000 2-door	416	0	0	625	7	0
2-door de luxe	433	10	0	651	12	0
4-door	441	0	0	662	17	0
4-door de luxe	462	0	0	694	7	0
Tourer	416	0	0	625	7	0
Tourer de luxe	433	0	0	651	12	0
Traveller	471	10	0	708	12	0
Traveller de luxe	488	10	0	734	2	0
Cowley	555	10	0	834	12	0
Oxford III	589	0	0	884	17	0
Traveller	665	0	0	999	17	0
OLDSMOBILE						
88	1,820	0	0	2,731	7	0
Super 88	1,965	0	0	2,948	17	0
98	2,260	0	0	3,391	7	0
PACKARD						
4-door Sedan	1,680	0	0	2,521	7	0
Station Wagon	1,745	0	0	2,623	17	0
Hawk hardtop	2,004	0	0	3,007	7	0
PANHARD						
Dyna Grand Standing	702	8	8	1,055	0	0
Convertible	1,032	8	8	1,550	0	0
PEERLESS						
G.T. 2-litre	998	0	0	1,498	7	0
PEUGEOT						
203	633	9	1	952	8	2
403	796	2	11	1,195	11	5
Estate car	865	0	0	1,298	17	0
PLYMOUTH						
Savoy Vee-8	1,718	0	0	2,578	7	0
Belvedere convertible	1,790	0	0	2,686	7	0
Savoy Suburban	1,915	0	0	2,773	17	0
Fury	1,890	0	0	2,791	7	0
PONTIAC						
Chieftain Catalina	1,980	0	0	2,971	7	0
Bonneville Custom	2,300	0	0	3,461	7	0
Super Chief Catalina	2,040	0	0	3,061	7	0
Star Chief Catalina	2,150	0	0	3,226	7	0
PORSCHE						
346A/1600 fixed head	1,330	0	0	1,996	7	0
Hardtop (detachable)	1,450	0	0	2,176	7	0
Cabriolet (detachable)	1,490	0	0	2,236	7	0
356A/1500 fixed head	2,100	0	0	3,151	7	0
Carrera hardtop	2,220	0	0	3,331	7	0
Carrera Cabriolet	2,260	0	0	3,391	7	0
PRINCESS						
IV	2,250	0	0	3,376	7	0
IV limousine	2,360	0	0	3,541	7	0
L.W.B. models	2,150	0	0	3,226	7	0
RAMBLER						
De luxe	1,250	0	0	1,876	7	0
Super	1,285	0	0	1,928	17	0
Estate car	1,375	0	0	2,063	17	0
Custom	1,350	0	0	2,026	7	0
Estate car	1,440	0	0	2,161	7	0
RENAULT						
750	437	0	0	656	17	0
Renault (*cont.*)						
Dauphine	505	0	0	758	17	0
(Ferlec clutch)	530	10	0	797	2	0
Frégate de luxe	894	10	0	1,343	2	0
Transfluide	987	0	0	1,481	17	0
Domaine estate car	894	10	0	1,343	2	0
RILEY						
One-point-five	575	0	0	863	17	0
Two-point-six	940	0	0	1,411	7	0
(automatic)	1,045	0	0	1,568	17	0
ROLLS-ROYCE						
Silver Cloud	3,795	0	0	5,693	17	0
Limousine	4,595	0	0	6,783	17	0
Freestone and Webb	5,282	0	0	7,924	7	0
Hooper	5,085	0	0	7,628	17	0
H. J. Mulliner	5,550	0	0	8,326	7	0
James Young	5,010	0	0	7,517	7	0
Silver Wraith						
F. and W. limousine	5,638	0	0	8,458	7	0
7-passenger	5,752	0	0	8,629	7	0
Park Ward	5,495	0	0	8,243	17	0
7-passenger	5,805	0	0	8,708	17	0
H. J. Mulliner	5,625	0	0	8,438	17	0
Hooper limousine	5,580	0	0	8,371	7	0
7-passenger	5,805	0	0	8,708	17	0
James Young	5,680	0	0	8,521	7	0
ROVER						
60	883	0	0	1,325	17	0
75	963	0	0	1,445	17	0
90	999	0	0	1,499	17	0
105S	1,088	0	0	1,633	7	0
105R	1,124	0	0	1,687	7	0
105R de luxe	1,155	0	0	1,733	17	0
Land Rover II 88	640	0	0	640	0	0
Diesel	740	0	0	740	0	0
109in Basic	730	0	0	730	0	0
Diesel	820	0	0	820	0	0
107in estate car	815	0	0	1,223	17	0
SIMCA ARONDE						
Aronde 1300	532	0	0	799	7	0
Aronde Chatelaine	650	0	0	976	7	0
Elysée 1300	599	0	0	899	17	0
Montlhéry	625	0	0	938	17	0
Grande Large (Flash)	679	0	0	1,019	17	0
Grande Large (Special)	705	0	0	1,058	17	0
SIMCA VEDETTE						
Beaulieu	965	10	0	1,449	12	0
SINGER						
Gazelle	598	0	0	898	7	0
Convertible	665	0	0	998	17	0
Estate car	695	0	0	1,043	17	0
SKODA						
440	575	0	0	863	17	0
1201	640	0	0	961	7	0
Estate car	695	0	0	1,043	17	0
450 *convertible*	725	0	0	1,088	17	0
STANDARD						
Eight	425	0	0	637	17	0
Super Ten	435	0	0	653	17	0
Pennant	485	0	0	728	17	0
Companion estate car	495	0	0	743	17	0
Ensign	590	0	0	899	17	0
Vanguard III	675	0	0	1,013	17	0
(automatic)	790	0	0	1,186	7	0
Estate car	765	0	0	1,148	7	0
Sportsman	820	0	0	1,231	7	0
STUDEBAKER						
Scotsman	1,130	0	0	1,696	7	0
Estate car	1,240	0	0	1,861	7	0
Commander	1,400	0	0	2,101	7	0
President	1,490	0	0	2,236	7	0
SUNBEAM						
Rapier	695	0	0	1,043	17	0
Convertible	735	0	0	1,103	17	0
TRIUMPH						
TR3	699	0	0	1,049	17	0
Hardtop	734	0	0	1,102	7	0
TURNER						
A.35 Sports	575	0	0	862	17	0
UNICAR						
Model T	265	0	0	399	10	0
VAUXHALL						
Victor	498	0	0	748	7	0
Victor Super	520	0	0	781	7	0
Estate car	620	0	0	931	7	0
Velox III	655	0	0	983	17	0
Cresta II	715	0	0	1,073	17	0
VOLKSWAGEN						
Basic	435	0	0	653	17	0
De Luxe	505	0	0	758	17	0
Convertible	682	10	0	1,025	2	0
Karmann-Ghia coupé	822	10	0	1,235	2	0
Convertible	929	0	0	1,394	17	0
WOLSELEY						
1500	530	0	0	796	7	0
Fifteen-fifty	660	0	0	991	7	0
Six-ninety III	850	0	0	1,276	7	0
(automatic)	955	0	0	1,433	17	0
THREE-WHEELERS						
A.C. Petite II	319	0	0	399	8	6
Bond 2-seater	222	0	0	279	5	9
4-seater	254	0	0	319	8	11
Bruetsch Mopetta	159	12	0	199	3	7
Coronet	360	0	0	449	15	6
Heinkel	312	15	0	394	15	0
Messerschmitt KR200	260	0	0	325	6	4
Reliant Regal	346	0	0	433	3	6
Tourette Senior	259	0	0	325	0	11